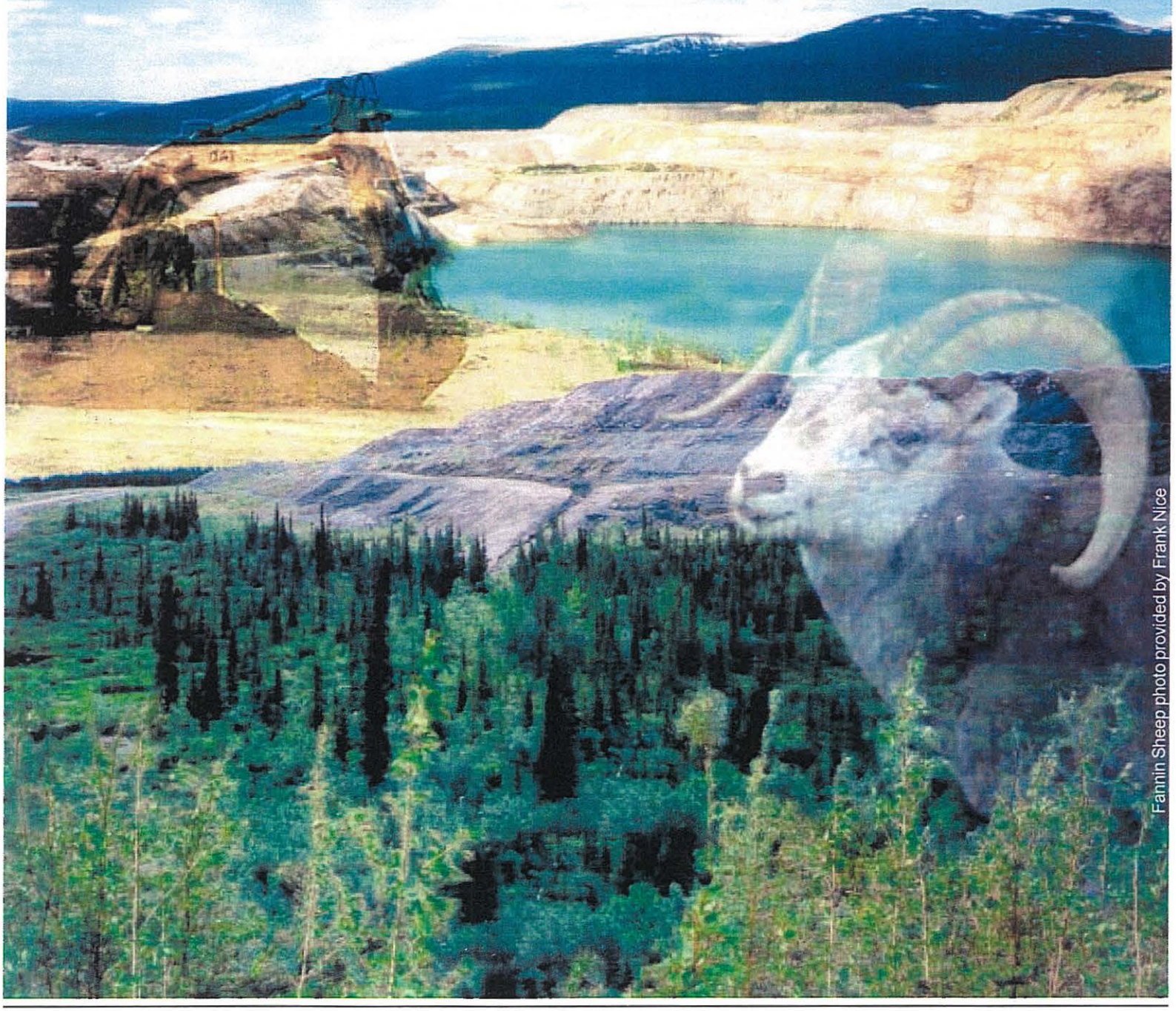
Deloitte & Touche

Anvil Range Mining Corporation –

Interim Receivership

2004-2008 Water Licence Renewal Key Documents



Fannin Sheep photo provided by Frank Nice

Deloitte & Touche LLP
Suite 1900
79 Wellington Street West
Toronto, ON M5K 1B9
Canada

Tel: (416) 601 6150
Fax: (416) 601 5901
www.deloitte.ca

Memo

Deloitte & Touche

Date: October 7, 2003

To: File

From: Shannon Glenn

Subject: Key Documents related to the Water Licence Renewal

This file contains correspondence related to the renewal of the Anvil Range water licence renewal. Documents contained herein are **STRICTLY CONFIDENTIAL.**

The documents have been organized according to the following sections:

1. Comments on May 2002 Project Description
2. Scope of EAR and Guidelines
3. Previous CEAA Screenings
4. Legal Advice CEAA/YEAA
5. Comments on EAR
6. Public Consultation
7. Ross River
8. Metals in Vegetation
9. Companion Document to the EAR
10. Liaison Ottawa and Type II
11. Screening Reports
12. Water Board Correspondence
13. Interventions

May 27, 2002

Mr. Ian Church,
Director
Environment Directorate
DIAND
345-300 Main Street,
Whitehorse, Yukon
Y1A 2B5

Dear Mr. Church:

Re: Re-licensing of Faro Mine

In a letter to the Yukon Salmon Committee, dated May 8, 2002 (attached), the Yukon Territory Water Board indicated that your office would be receiving an Environmental Assessment Report on the Faro Mine from Deloitte and Touche "in the near future".

Would you please provide the Yukon Salmon Committee with any details currently available on the timing of this submission and your plans for its review?

The Yukon Salmon Committee requests that its address be placed on the circulation list for any documentation related to this review.

Thank you kindly.

Sincerely,

Lorelei Smith
Chair, Yukon Salmon Committee

Indian and Northern Affairs Canada
www.inac.gc.ca

Affaires indiennes et du Nord Canada
www.ainc.gc.ca

Environment Directorate
Northern Affairs Program
#345 - 300 Main Street
Whitehorse, Yukon
Y1A 2B5
Fax: (867)667-3216

Your file - Votre référence

Our file - Notre référence
5510-5-002J

June 13, 2002

To Federal Distribution List:

DFO	Coast Guard
DOE	Parks Canada
NR Canada	

Re: *Canadian Environmental Assessment Act* Review of Anvil Range Mining Corporation- Interim Receivership Water Licence Renewal

The purpose of this letter is to confirm your agency's role in the environmental assessment of the Water Licence Renewal for Anvil Range Mining Corporation - Interim Receivership. This proposed project will require a Water Licence renewal under the *Yukon Waters Act* thereby triggering a review under the *Canadian Environmental Assessment Act* (CEAA). DIAND has declared itself a Responsible Authority (RA) for the project under Section 5 of CEAA.

Affixed is the Project Description (Volume I and II) pertaining to this project.

In accordance with the Regulations Respecting the Coordination by Federal Authorities of Environmental Assessment Procedures and Requirements pursuant to CEAA, please indicate (by checking the appropriate box) by **July 19, 2002** whether or not your department / agency:

1. Has, or anticipates identifying a responsibility under Section 5(1)(d) of CEAA to assess the environmental effects of the project (ie. Are an RA);

   ☐ YES ☐ NO

2. can provide specialist advice pursuant to Section 12(3) of CEAA to DIAND with respect to an environmental assessment of the proposed project (ie. are an Expert Federal Authority (FA)); and

   ☐ YES ☐ NO

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3. requires additional information to make a determination referred to in (1) or (2) above.

□ YES □ NO

If your answer to (1) above is YES, please indicate the trigger and your contact information (name, address, phone and fax).

If your answer to question (3) is YES, please forward your request for additional information to the DIAND Environment Directorate.

Please advise me what role your department plans to play in this review by fax at (867) 667-3216. If your response is not received by **16:30 PST on July 19, 2002**, DIAND Yukon Region will assume that your department / agency has no responsibility or interest in this project. Please contact myself at (867) 667-3865 or Ian Church at (867) 667-3860 should you have any questions.

Sincerely,

Leslie Gomm
Manager, Project Assessment

c. Yukon Territory Water Board
Deloitte & Touche Inc.
RERC
CEAA Agency

Enc.

RERC - ANVIL RANGE PROJECT DISTRIBUTION LIST

H:\RERC\DistList\Faro\faro_dis_pd.wpd

CHAIR: Ian Church Environment Directorate Northern Affairs Program 345-300 Main Street Whitehorse, YT Y1A 2B5 Tel: (867) 667-3860 Fax: (867) 667-3216 e-mail: churchi@inac.gc.ca	Leslie Gomm Environment Directorate Northern Affairs Program 345-300 Main Street Whitehorse, YT Y1A 2B5 Tel: (867) 667-3865 Fax: (867) 667-3216 e-mail: gomml@inac.gc.ca	Derek Fraser Environment Directorate Northern Affairs Program 345-300 Main Street Whitehorse, YT Y1A 2B5 Tel: (867) 667-3320 Fax: (867) 667-3216 e-mail: fraserd@inac.gc.ca
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RMO - Tintina District PO Box 289 Watson Lake, YT Y0A 1C0 Attn: RMO - Gord Dumas Tel: (867) 536-7335 Fax: (867) 536-7331 e-mail: dumasg@inac.gc.ca	Doug Bishop A.R.M.O. Tintina (Ross River) PO Box 107 Ross River, Yukon Y0B 1S0 Tel: (867) 969-2243 Fax: (867) 969-2309 e-mail: bishopd@inac.gc.ca	Ryan Parry Environment Directorate Northern Affairs Program 345-300 Main Street Whitehorse, YT Y1A 2B5 Tel: (867) 667-3345 Fax: (867) 667-3216 e-mail: parryr@inac.gc.ca
Laura Spicer (*Michelle Edwards*) Environmental Specialist Funding Services, I&I 345-300 Main Street Whitehorse, YT Y1A 2B5 Tel: (867) 667-3326 Fax: (867) 667-3387 e-mail: spicerl@inac.gc.ca	Fred Privett Socio-Economic Benefits NAP -Mineral Resources 345 - 300 Main Street Whitehorse, YT Y1A 2B5 Tel: (867) 667-3177 Fax: (867) 667-3386 e-mail: privettf@inac.gc.ca	

Martin Raillard Manager Canadian Wildlife Service 91782 Alaska Highway Whitehorse, YT Y1A 3B7 Tel: (867) 393-6700 Fax: (867) 667-7942- e-mail: martin.raillard@ec.gc.ca	Sandra Orban Environmental Engineer Fisheries and Oceans 419 Range Road Whitehorse, YT Y1A 3V1 Tel: (867) 393-6730 Fax: (867) 393-6738 e-mail: orbans@pac.dfo-mpo.gc.ca	Benoit Godin Environmental Contaminants Environment Canada Mile 917.82 Alaska Highway Whitehorse, YT Y1A 5B7 Tel: (867) 667-3867 Fax: (867) 667-3402 e-mail: Benoit.Godin@ec.gc.ca
Jon Bowen, Manager, Environmental Assessment YTG Environment (V-19) Box 2703 Whitehorse, YT Y1A 2C6 Tel: (867) 667-5409 Fax: (867) 667-3641 email: Jon.Bowen@gov.yk.ca	Ruth Gotthardt YTG - Business, Tourism & Culture (L-2A) Box 2703 Whitehorse, YT Y1A 2C6 Tel: (867) 667-5983 Fax: (867) 667-5377 e-mail: Ruth.Gotthardt@gov.yk.ca	L. Richards YTG - Environmental Health Services #2 Hospital Road Whitehorse, YT Y1A 3H8 Tel: (867) 667-8321 Fax: (867) 667-8322 e-mail: Lynn.Richards@gov.yk.ca
Naresh Prasad Workers Compensation Board Occupational Health & Safety Box 2703 Whitehorse, YT Y1A 2C6 Tel: (867) 667-3777 Fax: (867) 393-6279 e-mail: Naresh.Prasad@gov.yk.ca	Diane Brent YTG - Energy, Mines & Resources (K-6) Box 2703 Whitehorse, YT Y1A 2C6 Tel: (867) 667-5471 Fax: (867) 667-8601 E-Mail: Diane.Brent@gov.yk.ca	Peter Percival YTG - Infrastructure (W-13) Box 2703 Whitehorse, YT Y1A 2C6 Tel: (867) 633-7918 Fax: (867) 393-6447 e-mail: peter.percival@gov.yk.ca
Ross River Dena Council General Delivery Ross River, YT Y0B 1S0 Chief Jack Caesar Tel: (867) 969-2277 Fax: (867) 969-2405 e-mail: rrdlands@yknet.yk.ca	Selkirk First Nation Box 40 Pelly Crossing, YT Y0B 1P0 Chief Lucy McGinty Tel: (867) 537-3331 Fax: (867) 537-3902 e-mail: mcgintyl@selkirkfn.com	Kaska Dena Council Box 9 Lower Post, BC V0C 1W0 Attn: Jean Gleason Tel: (250) 779-3181 Fax: (250) 779-3371 e-mail:

Liard First Nation Box 328 Watson Lake, YT Y0A 1C0 Attn: Laurie Allen Chief Daniel Morris Tel: (867) 536-2131 Fax: (867) 536-2332	Kaska Tribal Council P O Box 530 Watson Lake, YT Y0A 1C0 Chief Hammond Dick Tel: (867) 536-2805 Fax: (867) 536-2806	Council of Yukon First Nations 11 Nisutlin Drive Whitehorse, Y T Y1A 3S4 Attention: Chris Noble Tel: (867) 393-9231 Fax: (867) 633-6397
Carl S. Alleyne, Ph.D. Regional Environmental Assessment Coordinator Healthy Environments & Consumer Safety Branch 3155 Willingdon Green Vancouver, BC V5G 4P2 Tel: (604) 666-4693 Fax: (604) 666-3149 e-mail: Carl_Alleyne@hc-sc.gc.ca	Mike Walton Parks Canada Agency 205 - 300 Main Street Whitehorse, Yukon Y1A 2B5 Tel: (867) 667-3824 Fax: (867) 393-6701 e-mail: mike_walton@pch.gc.ca	Natural Resources Canada Iannick Lamirande Environmental Assessment Officer 580 Booth Street #3-3C6 Ottawa, ON K1A 0E4 Tel: (613) 996-0055 Fax: (613) 995-5719 email: ilamiran@nrcan.gc.ca
Colin Parkinson Navigable Waters Protection Officer 350-555 West Hastings Street Vancouver, BC V6B 5G3 Tel: (604) 775-8868 Fax: (604) 775-8828 e-mail: parkinsonc@pac.dfo-mpo.gc.ca	Paul Scott Canadian Environmental Assessment Agency Suite 320, Sinclair Centre 757 West Hastings Street Vancouver, BC V6C 1A1 Phone: 604-666-2431 Fax: 604-666-6990	Ian McGregor, Director General Natural Resources & Environment DIAND 10 Wellington Street Ottawa, Ontario K1A 0H4 Tel: 819-997-9381 Fax: 819-997-9623 e-mail: mcgregori@inac.gc.ca
Anne Snider, Chief Natural Resources & Environment, DIAND 10 Wellington Street Ottawa, Ontario K1A 0H4 Tel: 819-997-0046 Fax: 819-953-9066 e-mail: snidera@inac.gc.ca	Rick Meyers Director, Natural Resources & Environment, DIAND 10 Wellington Street Ottawa, Ontario K1A 0H4 Tel: 819-997-9828 Fax: 819-953-9066 e-mail: meyersr@inac.gc.ca	

Bob van Dijken Yukon Conservation Society 302 Hawkins St. Whitehorse, Yukon Y1A 31X6 E-mail: bob.vandijken@yt.sypatico.ca	Canadian Parks & Wilderness Society Box 31095 Whitehorse, Yukon Y1A 5P7	Yukon Salmon Committee Gord Zealand 100-400 Range Road Whitehorse, Yukon Y1A 3V1

Natural Resources Canada | Ressources naturelles Canada
Ottawa, Canada
K1A 0E4

Post-it™ FAX TRANSMITTAL MEMO / FEUILLETS POUR FAC-SIMILÉ 7671B

TO: / À: Ms. Gomm	FROM: / DE: I. LAMIRANDE
CO.: / CIE.: DIAND	CO.: / CIE.: NRCan
DEPT.: / SERVICE:	PHONE #: / Nº DE TÉL.:
FAX #: / Nº DE TÉLÉCOP.: 867-667-3216	FAX #: / Nº DE TÉLÉCOP.: 613-995-5719

NO. OF PAGES / NBRE DE PAGES

July 6, 2002

File #: YK-009

5570-5-002J Anvil Range P. Res

Leslie Gomm
Manager, Project Assessment
Environment Directorate
Northern Affair Program
Indian and Northern Affairs Canada
#340 - 300 Main Street
Whitehorse Yukon Y1A 2B5

Re: Anvil Range Mining Corporation - Interim Receivership Water Licence Renewal

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Ms. Gomm:

This letter is to advise you that in accordance with the *Regulations Respecting the Coordination by Federal Authorities of Environmental Assessment Procedures and Requirements* and following the review of the above mentioned project proposal, Natural Resources Canada (NRCan) does not have a responsibility under section 5 of the *Canadian Environmental Assessment Act* (CEAA) with regard to the present scope of the project.

In the context of subsection 12(3) of CEAA, NRCan may have expertise in the following areas which may apply to the project:

- forest ecology and resources
- geohazards (earthquakes, seismicity, landslides, etc.)
- geomatics
- geoscience (surficial and bedrock geology, geomorphology, groundwater, etc.)
- geotechnical
- mine site development, mineral processing technology, and mine site reclamation
- mine waste management, including tailings and waste rock, protection of surface and groundwater quality, and acid mine drainage

Any request for expertise should be made in writing, and the deadline for our response should be specified. In order to help us and avoid unnecessary delays, we invite you to provide us with information such as the scope of project, the scope of the assessment and the subject areas and/or portions of the documents to be reviewed.

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ENVIRONMENT DIRECTORATE

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Also, please note that as per your letter of June 14, 2002, requesting any comments we may have concerning the adequacy of the information provided in the Project Description and the 2002 Baseline Environmental Information document, NRCan will be reviewing the documents and will be providing any comments by the requested date.

If you have any questions regarding NRCan's response please do not hesitate to contact me by phone at (613) 996-0055 or by e-mail at Iannick.Lamirande@NRCan.gc.ca.

Sincerely,

Iannick Lamirande

Iannick Lamirande
Environmental Assessment Officer

Environment Canada / Environnement Canada

Environmental Protection
91782 Alaska Highway
Whitehorse, Yukon,
Y1A 5B7

5510-50025

B1

July 11, 2002

4484-37/A293

Leslie Gomm, Manager,
Environment Directorate
Northern Affairs Program
345-300 Main Street
Whitehorse, Yukon
Y1A 2B5

Re: Canadian Environmental Assessment Act Review of Anvil Range Mining Corporation - Interim Receivership Water Licence Renewal

In accordance with the Federal Coordination Regulations pursuant the Canadian Environmental Assessment Act; we do not anticipate a responsibility under section 5(1)(d) of CEAA; we can provide specialist advice pursuant section 12(3) of CEAA to DIAND with respect to the project described above; and we do not require additional information to make the above determination.

Should you have any questions, please do not hesitate to contact me at (867) 667-3402.

Yours truly,

Benoit Godin

Benoit Godin, Head
Environmental Contaminants

cc: Bill Slater - DIAND, Water Resources
Erik Val - DFO, Habitat

Canada

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48953

Anvil Range
5510-5-002J
P.Res.

Fisheries and Oceans Canada / Pêches et Océans Canada

100-419 Range Road
Whitehorse, Yukon
Y1A 3V1

Your reference:
Our reference: **02-HPAC-PA5-000-000200**

8 August 2002

Environment Directorate
DIAND
345-300 Main Street
Whitehorse, Yukon
Y1A 2B5

Attention: Leslie Gomm

Dear Leslie:

RE: **CEAA responsibilities for Relicensing of Faro mine site, Faro Yukon**

This will acknowledge the referral of this project was received 14 June 2002. It has been assigned the following file number and name:

Referral File No.: **02-HPAC-PA5-000-000200** DFO File No.:

Please refer to it on any subsequent correspondence.

This letter is to advise the Environment Directorate of DIAND that in accordance with the Regulations Respecting the Coordination by Federal Authorities of Environmental Assessment Procedures and Requirements and following the review of the above mentioned project, Fisheries and Oceans Canada (DFO) is a Responsible Authority under section 5 of the *Canadian Environmental Assessment Act* (CEAA)

In keeping with the principles of the proposed changes to the CEAA, Bill C19, the Responsible Authority is directed to be involved until information is brought forward that precisely defines DFO's responsibly under the act. As such, the DFO wish to participate in this review in the role of a Responsible Authority. The DFO also acknowledge the Fresh Water Supply Dam as part of this project scope and therefore are identified as a Responsible Authority in the screening for the mine site license renewal under the *Yukon Waters Act*.

Sandra Orban
DFO, Whitehorse

Canada

Yukon
Energy, Mines and Resources
Box 2703, Whitehorse, Yukon Y1A 2C6

August 9, 2002.

Leslie Gomm
Manager, Project Assessment
Environment Directorate, DIAND
Suite 345 - 300 Main Street
Whitehorse, Yukon
Y1A 2B5

RE: Review of the Anvil Range Mining Complex Project Description

Dear Leslie:

The Department of Energy, Mines & Resources (EMR) has reviewed the Anvil Range Mining Complex Project Description. We have no concerns with the contents of the Project Description. In our opinion, the Interim Receiver (Deloitte & Touche) is doing an excellent job of managing the site responsibly. They have implemented a risk-management approach to identifying problem areas, and they are addressing the highest risk areas (e.g. stability of the freshwater dam, stability of Faro Creek Diversion and Vangorda Creek Diversion). We believe the approach they are proposing (in consultation with DIAND) for water licence renewal and development of a final closure plan is the appropriate one. We are pleased to see an integrated approach to the relicensing and abandonment plan. EMR has been actively involved with the Technical Advisory Committee for the minesite for a number of years.

We would like to see an effective process for the ultimate abandonment and closure of this mine, as proposed by the interim receiver. However, we also note that the timelines will ultimately need to take into consideration the significant changes to regulatory regimes and processes that are imminent over the next few years, particularly devolution and the new Development Assessment Process (DAP). It is our hope that regulatory changes will not delay the review and approvals of this project but rather expedite final decisions.

Finally, YTG also notes that YTG and Canada both have obligations in the Devolution Transfer Agreement (DTA) with respect to the abandonment and closure of mines (Chapter 6). Consequently, as this project moves to final abandonment, provisions of the DTA may also apply.

Feel free to contact me if you require further clarification. Thank you for the opportunity to review this document.

Sincerely,

Diane Brent
Development Assessment Coordinator
Corporate Policy
TEL: (867) 667-5471
FAX: (867) 667-8601
E-MAIL: diane.brent@gov.yk.ca

CC: Jon Bowen, Environment, YTG
Lois Craig, EMR, YTG

Yukon
Business, Tourism and Culture
Box 2703, Whitehorse, Yukon Y1A 2C6

Heritage Resources

File No. 40501-11-28

July 31, 2002

To: Leslie Gomm, Manager, Project Assessment, Environment Directorate, DIAND

From: Ruth Gotthardt, Heritage Resources, Business, Tourism and Culture, Government of Yukon

Re: Anvil Range Mine Complex – Project Description

As requested, our office has completed the review of the Anvil Range Mine Complex Project Description and 2002 Baseline Environmental Information. Gartner Lee Ltd. is to be commended on the comprehensiveness of the heritage resource and traditional use information presented in Section 5 of the 2002 Baseline Environmental Information report.

The Project Description is unclear as to any proposed heritage resource impact assessment that might be undertaken as part of the mine closure/decommissioning, although the likelihood of identifying hitherto undocumented archaeological and historic period sites in the project area is acknowledged (page 27). I would recommend, given the fact that no impact assessment has ever been done in the mine area and given that significant traditional use is documented in the area, that a routine heritage resource impact assessment be a component of the mine closure environmental impact assessment, focussing on developments that involve new ground disturbance. A quick review of the Project Description suggests new ground disturbance will occur in association with the following:

- Relocation of the Faro Creek and Vangorda Creek diversion channels
- Development of a new landfill site
- Development of new borrow sources.

Please do not hesitate to contact me if further information is required at this time. Thank you for the opportunity to review the Anvil Range Mine Complex Project Description.

Ruth Gotthardt
Yukon Archaeologist

c. John Bowen, Environmental Assessment, Government of Yukon

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2002
ENVIRONMENT DIRECTORATE

416-601-5902

From: "Jon.Bowen" <Jon.Bowen@gov.yk.ca>
To: <gomml@inac.gc.ca>
Date: 7/29/02 10:38AM
Subject: Review of Anvil Range Mining Complex Project Description

Leslie
Please accept the following in response to your June 14, 2002 memorandum on the above subject. As requested, our review of the document was conducted keeping in mind "the adequacy of the information in the Project Description, the need for additional information, and any concerns or issues with the proposed plan for the site".
Though relatively complex, we understand the Project is essentially a water license renewal in which a key feature is the amalgamation of the two existing water licenses into one. It is understood that DIAND supports the amalgamation of the licenses and is referenced by the applicant. As DIAND Water Resources has in a manner, overseen the management of this site for quite some time, we accept that they have an intimate knowledge of this application and therefore defer the actual analysis of the proposed changes and amendments to current licence conditions to them.

The only comments I wish to bring forward at this time are as follows:

- Volume 2, Section 4.1 / 4.2.4 details Climatic and Atmospheric data for the area, much of which appears quite dated (20 years old). While I don't profess to be an expert of either the Faro site or Climate Change, I would venture that this site is one if not "the" mine site in the Yukon most susceptible to Climate Change due to the predicted increased severity and frequency of weather events. I was surprised that Company officials would so quickly dismiss this issue when brought up by Mr. Chuck Hubert on my behalf at the Faro Site Visit on July 17th. I am of the opinion that the lack of a regulatory requirement to address this issue should not release the Proponent from considering the issue in the Project Design. It is therefore recommended that at some point in this project, the Proponent consider the vulnerabilities of the project (i.e. tailings, freshwater dam etc.) to specific climatic parameters. For example, what is the degree of confidence in flood forecasting, temperature extremes, annual precipitation, snow pack density, wind speed, implications of change in winter freeze up and spring breakup dates on the site. Though currently a work in progress, CEAA has begun to take the issue of CC seriously as evidenced by the development of a Guidance Document to assist assessors and Proponents entitled "Incorporating Climate Change Considerations into Environmental Assessments". This above said, I appreciate that it may be more appropriate that this issue be addressed in the "Final Closure and Reclamation Plan" than in this water license and further discussion in this regard my be warranted.

- The second comment is with respect to the potential risk of tailings contamination to wildlife (i.e. moose). We understand that this concern has been conveyed to you by members of the Ross River Dena Council. May we suggest that a similar study be conducted as that which was implemented at BYG in response to similar concerns.

Jon Bowen
Manager, Environmental Assessment
YTG - Dept. of Environment (V-8)
P.O. Box 2703, Whitehorse, Yukon Y1A 2C6

MEMORANDUM

July 25, 2002

TO: Leslie Gomm
Environment Directorate
DIAND Whitehorse

FROM: Doug Bishop
Ross River Sub district
DIAND Ross River

RE: **Review of Anvil Range Mining Complex Project Description**

Two substantial items were not addressed in the document.

1. The remediation and clean-up of fuel contaminated soils, particularly in association with the lube stations.

2. The eventual revegetation and re-establishment of an ecosystem on at least a portion of the disturbed lands.

3. These two points should be reviewed as part of this process.

Call Doug Bishop at (867) 969-2243 if you have any questions.

Doug Bishop
ARMO Ross River

ENVIRONMENT DIRECTORATE

NORTHERN AFFAIRS PROGRAM, YUKON REGION
DIAND

#345 - 300 Main Street
Whitehorse, Yukon
Y1A 2B5
(867) 667-3251
Fax: (867) 667-3216

FAX TRANSMISSION COVER SHEET

To: Shannon Glenn

Fax: 416-601-5902

From: Leslie Gomm

Re: Fed EA's + EA's

Date: Aug. 13/02

YOU SHOULD RECEIVE 8 *PAGE(S), INCLUDING THIS COVER SHEET.*
IF YOU DO NOT RECEIVE ALL THE PAGES, PLEASE CALL (867) 667-3251.

For your files - originals to follow

Also - last page has my business card.

Thx

Leslie

Indian and Northern Affairs Canada
www.inac.gc.ca

Affaires indiennes et du Nord Canada
www.ainc.gc.ca

Environment Directorate
Northern Affairs Program
#345 - 300 Main Street
Whitehorse, Yukon
Y1A 2B5
Fax: (867) 667-3216

Your file - Votre référence

Our file - Notre référence
5510-5-002J

August 13, 2002

Deloitte & Touche LLP
Suite 1900
79 Wellington Street West
PO Box 29 TD Centre
Toronto, Ontario
M5K 1B9

Attention: Shannon Glenn

Re: Identification of Responsible Authorities and Expert Federal Authorities, CEAA Review of Anvil Range Mining Corporation - Interim Receiver Water Licence Renewal

In accordance with the Regulations Respecting the *Coordination by Federal Authorities of Environmental Procedures and Requirements* pursuant to the *Canadian Environmental Assessment Act* (CEAA), the Department of Fisheries and Oceans has identified themselves as a Responsible Authority for the CEAA Screening of the Anvil Range Relicencing Project (the project).

The following federal departments have identified themselves as Expert Federal Authorities pursuant to section 12(3) of CEAA for the Screening of the project:

- Environment Canada
- Natural Resources Canada

The DIAND Environment Directorate will be in contact with the other Responsible Authority to identify respective roles in the Screening and to determine the scope of the environmental assessment pursuant to section 8 of the Coordination Regulations.

Please contact me at (867)667-3865, email gomml@inac.gc.ca, should you have any questions.

Sincerely,

Leslie Gomm
Manager, Project Assessment

cc: Dept. Of Fisheries and Oceans - Sandra Orban
CEAA - Paul Scott
Environment Canada - Benoit Godin
NR Canada - Iannick Lamirande
DIAND - Anne Snider

enc. Coord. Reg. Responses

Environment Canada / Environnement Canada

Environmental Protection
91782 Alaska Highway
Whitehorse, Yukon,
Y1A 5B7

5510-50025

B1

July 11, 2002

4484-37/A293

Leslie Gomm, Manager,
Environment Directorate
Northern Affairs Program
345-300 Main Street
Whitehorse, Yukon
Y1A 2B5

Re: Canadian Environmental Assessment Act Review of Anvil Range Mining Corporation - Interim Receivership Water Licence Renewal

In accordance with the Federal Coordination Regulations pursuant the Canadian Environmental Assessment Act; we do not anticipate a responsibility under section 5(1)(d) of CEAA; we can provide specialist advice pursuant section 12(3) of CEAA to DIAND with respect to the project described above; and we do not require additional information to make the above determination.

Should you have any questions, please do not hesitate to contact me at (867) 667-3402.

Yours truly,

Benoit Godin

Benoit Godin, Head
Environmental Contaminants

cc: Bill Slater - DIAND, Water Resources
Erik Val - DFO, Habitat

Canada

ENTERED 48953

Indian and Northern Affairs Canada
Affaires indiennes et du Nord Canada

Leslie Gomm, Ph.D., P.Eng.

Manager,
Project Assessment
Environment
Northern Affairs Program
Telephone: (867) 667-3885

Gestionnaire,
Évaluation de projets
Direction de l'environnement
Programmes des affaires du Nord
Téléphone: (867) 667-3885

Canada

Environment Canada Environnement Canada

Environmental Protection
91782 Alaska Highway
Whitehorse, Yukon,
Y1A 5B7

August 8, 2002 4484-37/A293

Leslie Gomm, Manager
Environment Directorate
310-300 Main Street
Whitehorse, Yukon
Y1A 2B5

Dear Ms. Gomm:

Re: Canadian Environmental Assessment Act Review of Anvil Range Mining Corporation - Interim Receivership Water Licence Renewal

We have reviewed the above document and we have some grave concerns about the proposal. We submit that there is not enough information to justify the current project description. We are looking for a rational in the rejection of the Integrated Comprehensive Abandonment Plan as produced by the company the Interim Receivership represents.

The Faro site has been in want of a decommissioning plan since the days of Cyprus Anvil Mining Corporation. The company at the time completed a $51 million abandonment plan which was put in the licence (Y2L3-2226) in 1982. A licence clause required the applicant to cap or flood the surface tailings within 3 years of any temporary cessation of the tailings deposition. The mine closed in 1982 and the requirement for the abandonment plan was waived in order to facilitate the re-opening of the site by Curragh Resources Inc. in 1985 (YIN85-05AL). The new licence required that a site abandonment plan be produced by December 1986. The company submitted a plan for further studies rather than a decommissioning plan. A licence amendment was issued in 1988 calling for an abandonment plan for the tailings impoundment, the Rose Creek Diversion, and non-tailings facilities at the Faro site by March 1991. In 1990, a new licence (IN89-001) maintained the deadline of March 1991. In 1992, amendment #3 to the IN89-001 water licence required the submission of the Integrated Comprehensive Abandonment Plan (ICAP) by December 31, 1994. DIAND estimated the Faro/Vangorda liability at the time to have been about $85 million. In 1992, the tailings discharge to the impoundment facility stopped and the tailings were directed towards the Faro pit from then on. In 1993, Curragh asked for a year extension to the ICAP submission until

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December 31 1995, but was denied by the YTWB. September 1993, Curragh was placed in receivership. In 1995 Anvil Range Mining Corporation re-opened the mine and applied for an extension of the ICAP deadline to November 1996. November 1996, Anvil Range submited the ICAP. The YTWB gave a 1 year extension to the company to apply for an amendment for incorporation of the plan into the water licence. January 1998, a new licence(QZ95-003) was issued (2.5 years after application). The mine was given until 1999 to submit an amendment to incorporate ICAP into the licence. February 1998, Anvil Range shut down and was placed into receivership soon after. July 2000, the mine was still in receivership, there was no progress in reviewing or approving the ICAP, EP asked the YTWB to amend the licence to start implementing tailings removal from the Down Valley Tailings Facility into the Faro pit. October 2000, EP requested the YTWB to delay their decision until March 2001 to allow DIAND to conclude negotiations with Cominco for future site management that would be expected by February 2001. In March 2001, the Board indicated that they would not initiate a hearing at that time as DIAND and Deloitte had informed the Board that finalization of the 'Trustco' arrangement with Cominco was expected soon and waiting for this would incur little delay. In February 2002 it was announced that the Trustco proposal was dead.

In section 3.1.1.1, Part I of the proposal, valuation reports by Deloitte & Touche Corporate Finance Inc. and Stratcona Mineral Services Ltd. had identified in the twenty-fourth report of the Interim Receivership (dated March 14, 2001) that beyond some possible recoveries from business interruption claims and the realisation from sale of equipment and other assets, the mine had a nil value. DIAND, YTG and Cominco signed a memorandum of understanding to allow the transfer of the mine and certain critical assets into a new company with Cominco overseeing the security and environmental maintenance of the property. Earlier in 2002 it was announced that the MOU had been cancelled. The prospect of the mine re-opening is close to nil, the mine situation is similar to the time Anvil Range shut down and the ICAP was submitted.

In section 3.2.3 of the proposal, Deloitte & Touche indicated that it was recognised by all stakeholders that proactive, longer-term perspective was essential in managing environmental issues in a fiscally responsible manner.

We have concerns with the proposed workplan for the period from 2004 to 2008. As described in Part II, Section one. The work completed in the Far/Vangorda ICAP largely evolved over the period from 1987 to 1996 and was the result of a significant body of site investigations and research. The present proposal suggests there is a need to re-visit virtually all of this work and as a result, to delay the start of any meaningful reclamation for a further six years (2008). It must also be acknowledged that implementation of this plan would only start in 2008 and could take another 5 to 10 years beyond that to complete significant elements.

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The rationale given for the need to do further study includes: "knowledge gaps" (p. 44); "internal inconsistencies" (p. 58); "since 1996 the scientific understanding at this mine has advanced" (p. 58), and; "general knowledge and experience in mine reclamation technologies have advanced" (p. 58). Simple statements such as these are inadequate to justify this approach. The proponent seems to suggest that they have already completed a comprehensive review of the ICAP and have determined that several of the key recommendations are inadequately supported. This information should be shared with regulators to justify the need for further studies as proposed. The specific new technologies or information which supports reconsideration of the abandonment stategy should be clearly stated.

Key conclusions in the ICAP included: 1) the Vangorda and Faro pits cannot be maintained as clean pits in the long term due to the impracticality of controlling both internal and external metal release to pit waters, therefore the Faro and Vangorda Creek diversions must be upgraded as permanent structures; 2) covers on Faro waste rock dumps and dump relocation is impractical; 3) till covers were proposed for the Vangorda rock dump and the Grum dump sulphide cell; 4) water treatment will be a long term requirement for pit waters and rock dump drainage at Faro and Vangorda; 5) given the geochemical and physical stability concerns in the Down Valley Tailings facility, the tailings, or at least a substantial portion, should be relocated for sub-aqueous disposal in the Faro Pit. Specific objectives for the ICAP were further outlined in ICAP Volume I Section 2.2.3.

Studies over the last 20 years have confirmed the very high acid-generation potential of the tailings. Since 1988 several studies have shown that (particularly in the roughly 40% of the tailings which are not slimes), there are high levels of soluble metal salts now stored in the tailings as a result of 20 to 30 years of uncontrolled oxidation. Release of these metals, either slowly through leaching into the underlying aquifer or rapidly through some level of failure of an impoundment, are a real threat to the downstream creeks.

There is a possibility that as the Receivership winds down there will yet again be a new team of consultants assigned to this project within the next year or two. It is important that everyone focus on trying to maximize opportunities to build on what has already been done and to present clear and compelling evidence in support of proposals for additional studies of options.

The path forward should also focus on creating opportunities for progressive reclamation – identifying elements which can be started prior to completion of a penultimate abandonment plan. The proposal should look at each major reclamation activity and clearly justify why action cannot be taken sooner rather than later.

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The 1995 Pollution Prevention Policy indicates that the federal government's strategy respect the Precautionary Principle that was part of the Rio Declaration on the Environment and Development. That principle states that, "When there are threats of serious or irreversible damages, lack of full scientific certainty shall not be used a reason for postponing cost-effective measures to prevent environmental degradation".

On the basis of the points above, we are asking the Proponent to address these concerns and, in particular, to provide a rationale for the exclusion of the ICAP and its closure option evaluations in the project proposal. . We trust that this request can be accomodated without delaying this process more than a few weeks. We wish to receive this information before we can provide further comments for the Environmental Assessment Guidelines.

Should you have any questions, please do not hesitate to contact me at (867) 667-3402.

Yours truly,

Benoit Godin

Benoit Godin, Head
Environmental Contaminants

cc: Erik Val - DFO, Habitat
Bill Slater - DIAND, Water Resources

To: Leslie Gomm, Environment Directorate

From: Bill Slater, Water Resources Division

cc. Bud McAlpine, Milos Stepanek
Valerie Chort, Deloitte and Touche Ltd.
Benoit Godin, Environment Canada
Sandra Orban, DFO

Date: August 13, 2002

Re: Faro Mine, Deloitte and Touche/Anvil Range Mining Corp., Project Description

Water Resources has completed a review of the May 31, 2002 Project Description submitted by Deloitte and Touche for the Faro Mine. As requested in your letter dated June 14, our comments focus on scope of project, scope of assessment, and information requirements for the Environmental Assessment Report (EAR).

Scope of Project/Project Proponent

In general, the "scope of project" for the purposes of CEAA should be consistent with the five year water licence renewal proposed in the Project Description. The proposed project comprises two principle activities: (1) ongoing site care and maintenance, and (2) development of a comprehensive decommissioning plan for the site. Under the current circumstances, these two aspects appear to have two different proponents.

Deloitte and Touche, as the interim receiver for Anvil Range Mining Corp., remains the proponent for the ongoing site care and maintenance until such time as the receivership is completed.

Since it is generally accepted that the property has no commercial value at this time and the property owner, Anvil Range Mining Corp. is insolvent, the proponent for completion of a comprehensive decommissioning appears to be the Government of Canada. As such, the development of a decommissioning plan should remain fully within the control of the Government of Canada. No third party should be authorized to undertake this work unless that party is an agent of the Government of Canada, specifically for the development of a decommissioning plan. Currently, Water Resources is not aware that the Government of Canada has entered into a contract with an agent for development of the Government of Canada's decommissioning plan for the Faro/Vangorda/Grum sites.

Regardless of the difficulty created by having two proponents, the project scope must include both aspects of the project. As with most major projects, the development and implementation of an effective decommissioning plan will constitute the most critical mitigation measure. Without this mitigation measure, it will not be possible to reach a CEAA determination that "significant

adverse environmental effects are not likely to occur." In fact, it is unclear whether such a determination can be reached at all for this site, given the current circumstances, whereby significant adverse environmental effects are likely already occurring.

CEAA Subsection 15(3) requires consideration of "every construction, operation, modification, decommissioning, abandonment or other undertaking" that in the Responsible Authorities' opinion is likely to be carried out in relation to the project. In applying this life-cycle approach to EA, the assessment must consider the decommissioning of the project because DIAND, as the RA, knows that it is likely to be carried out (especially since any positive EA determination will require that it occur). This creates a dilemma because DIAND cannot complete full life-cycle planning for this project because the site is presently causing environmental effects that could be considered significant, but no comprehensive decommissioning plan is currently under consideration. While previous plans have been submitted, the most recent of these has not been reviewed and the current "Project Description" indicates that previous plans are no longer being considered.

Without a comprehensive decommissioning plan, it may be possible to reach a positive CEAA determination for this project only if DIAND: (1) concludes that a facility of this type can be successfully decommissioned without causing significant adverse environmental effects, and (2) decides that it can rely on the findings of a future environmental assessment to evaluate the effects of the overall project including the decommissioning. However, it is not clear this approach would allow DIAND to remove decommissioning from the scope of project.

As you know, some of the proposed works in the Project Description are related to the Fresh Water Supply Dam (FWSD). The undertakings associated with this separate "physical work" can likely be considered as a different "project" for the purposes of CEAA. This will allow a more timely review of the proposed works. The review is currently underway and the cumulative effects of the combined projects will have to be considered. In order to effectively separate the two environmental assessments, the works for the FWSD should be identified in the Project Description from the perspective of a cumulative effects assessment only. In Water Resources' opinion, the separation of the two projects is possible because there are two "physical works" and the projects are neither interdependent nor linked, when applying the "principle project/accessory test" as described in the Responsible Authorities' Guide.

Scope of Assessment

For the project described in the Project Description, the scope of assessment should be limited to the factors required for screenings under Clauses 16(1)(a) to 16(1)(d) of the CEAA. No additional factors need to be considered under 16(1)(e), since additional, more detailed assessment will be required for review of the decommissioning plan. At this stage, the Comprehensive Study will require consideration of additional factors.

Information Requirements for the EAR

The Project Description provides limited detail on how Deloitte and Touche intends to manage the Faro/Vangorda/Grum site over the next five years. There does not appear to be a comprehensive plan for site management that provides guidance for Deloitte and Touche and regulatory agencies about management objectives and actions required to meet them. The risk assessment work completed within the past year appears to be a first step in developing such a plan, but it fails to address the interdependent and conflicting nature of some objectives.

The Environmental Assessment Report should provide a comprehensive site management plan that addresses management of the site during the five year licence renewal. This plan must identify management actions including the internal decision-making and regulatory approval processes. There are several critical areas that should be addressed in the plan, and the methods of reconciling conflicting objectives identified. These include; water management plans, ARD management plans, sludge disposal plans and design criteria. These plans need to consider their effect on risks associated with physical structures. In some cases, the plan may need to identify contingency actions, and the triggers that lead to their implementation (i.e. groundwater contamination contingencies).

Many of the activities described in the Project Description and that should be proposed in a site management plan have not been described in adequate detail for review processes. Deloitte and Touche is proposing upgrade work on several site structures (i.e. Faro Creek Diversion, Vagorda Diversion, seepage collection systems) but has not provided detailed schedules or designs. It also proposes relocation of some acid generating materials but has not described detailed plans. These activities and others that are described in the Project Description will require further approval once detailed information is available. The EAR needs to describe the projects in as much detail as possible, and where inadequate detail is provided, a process for future review and approval should be described.

The "baseline" report submitted as part of the project description should be recognized as part of the environmental assessment report. However, the presentation of information needs to be revised to more accurately reflect conditions.

First, the data often does not describe true baseline conditions, but rather describes current conditions or an average calculated on the basis of changing conditions over the life span of the facility. The terminology used to describe the findings should be revised to more accurately reflect the true nature of the data presented.

Second, some of the data are presented in formats that fail to illustrate obvious conclusions. For example, much of the water quality data for impacted sites is presented as averages, where in some cases the standard deviation is greater than the mean. Mean values provide only very limited useful information at sites where obvious trends are apparent.

Third, there is little consistency in the treatment of data. In some cases, data sets are truncated to eliminate values that are of questionable validity (i.e. groundwater wells in the area of the Main waste rock dumps). In other cases, obvious erroneous values are left in the data sets, resulting in

average values that are not reflective of real conditions (i.e. V2).

When an environmental conditions submission is re-compiled for the Environmental Assessment Report, it should be revised to present data in a manner that presents a conservative and evaluation of site and background conditions.
Finally, I have attached a memo from Mr. Milos Stepanek at Geo-Engineering. In this memo, Mr. Stepanek identifies several deficiencies with the current project submission. Water Resources agrees with Mr. Stepanek's statements. It is Water Resources' opinion that the issues must be addressed during preparation of the Environmental Assessment Report.

Conclusion

Water Resources looks forward to: (1) reviewing an environmental assessment report that clearly describes Deloitte and Touche Ltd.'s management plans for interim care and maintenance, and (2) being involved in the development of the Government of Canada's decommissioning plan for the Faro/Vangorda/Grum mine sites. We are confident that effective application of environmental assessment and regulatory legislation will assist in implementing a decommissioning that provides effective mitigation of environmental effects, in a cost-effective manner. The submissions made for the Environmental Assessment Report should focus upon providing adequate information for environmental assessment and regulatory reviews, with all proposals supported by rigorous data analyses and conservative approaches. Thank you for the opportunity to review the Project Description. If you have any questions about our comments, please call me at 667-3147.

Bill Slater

Fisheries and Oceans Canada
Pêches et Océans Canada

100-419 Range Road
Whitehorse, Yukon
Y1A 3V1

Your reference:

Our reference: 02-HPAC-PA5-000-0000200

5 September 2002

Leslie Gomm
Environment Directorate
DIAND
345-300 Main Street
Whitehorse Yukon
Y1A 2B5

Attention: Leslie Gomm

Re: **Faro Mine Site Water Licence Renewal, Faro Yukon**

Fisheries and Oceans Canada (DFO) has reviewed the following submission titled: Anvil Range Mining Corporation – Interim Receivership, Project Description, May 31, 2002, Volume I of II. The DFO acknowledge the license renewal includes a number of activities including the proposal to conduct studies related to long term property abandonment. The DFO believe it is critical for historical information to be fully considered during the screening for this license renewal under the Canadian Environmental Assessment Act (CEAA) to allow regulators to make informed decisions on this project. It is premature to provide comment on the Project Description until all relevant material is reviewed.

A cursory review of the property history indicates the Anvil Range Mining Corporation submitted an Integrated Comprehensive Abandonment Plan (ICAP) in November of 1996. It is our understanding the ICAP was not reviewed by regulators and, as such, there has never been an assessment as to its accuracy. The DFO contend that the 1996 ICAP must be reviewed as it likely contains concepts or approaches on aspects of abandonment which may identify areas where abandonment studies are not warranted. The current Interim Receiver of the Faro mine site, as the proponent, is required to justify the Project Description which includes the rational for not considering the 1996 ICAP and the previous abandonment proposals made by the Anvil Range Mining Corporation. In the interest of commencing the abandonment of the Faro mine site, the DFO believes that ignoring this review and assessment may lead to unnecessary delays and expenses in developing a final abandonment plan.

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In summary the DFO, as a Responsible Authority, requires that the interim receiver provide a summary and assessment of the 1996 ICAP review and a rationale why the information provided can not contribute to the proposed license renewal. It is essential that the Responsible Authorities understand the decision process, which resulted in a divergence from the abandonment proposal used in the 1996 ICAP. This request for assessment essentially identifies that the DFO, as a Responsible Authority, must be included early in the decision process. Regulators must be able to understand the decision process, which direct the progression of this CEAA review and have input at the appropriate time. To that end, it is essential the DFO know details regarding the relationship between the Interim Receiver, the funding agency and the regulators in terms of project management. The DFO support the approach presented by the Federal Department of Environment in their letter dated 8 August 2002, and will provide further comment on the Project Description following receipt of the information requested surrounding the 1996 ICAP.

Should you have any questions or comments, please contact me at (867) 393-6730, or FAX (867) 393-6737.

Sandra Orban
DFO, Whitehorse

cc: Benoit Godin, DOE

Natural Resources Canada | Ressources naturelles Canada

Ottawa, Canada
K1A 0E4

Post-it FAX TRANSMITTAL MEMO / FEUILLETS POUR FAC-SIMILÉ 7671B

TO: A: Ms. Gomm	FROM: DE: J. Lamirande
CO./ CIE.: DIAND	CO.: CIE.: NRCan
DEPT.: SERVICE:	PHONE #: N° DE TÉL.:
FAX #: N° DE TELECOP.: 867-667-3716	FAX #: N° DE TELECOP.: 613-995-5719

September 9, 2002

File #: YK-009

Leslie Gomm
Manager, Project Assessment
Environment Directorate
Northern Affair Program
Indian and Northern Affairs Canada
#340 - 300 Main Street
Whitehorse Yukon Y1A 2B5

Re: Anvil Range Mining Corporation - Interim Receivership Water Licence Renewal

Dear Ms. Gomm:

This letter is in response to your request of June 14, 2002, that Natural Resources Canada (NRCan) review the Anvil Range Mining Corporation Project Description document and the 2002 Baseline Environmental Information document prepared by Deloitte & Touche. Please find below NRCan's comments. Scientists at NRCan with expertise in hydrogeology, seismicity, mineral deposits, acidic drainage, waste rock and tailling disposal have reviewed the above-mentioned documents.

Hydrogeology

The following comments focus on hydrogeological issues in Volume 1, Part II, Section 2.2 "Development and approval of a final reclamation plan" and corresponding sections in Vol. 2.

In Vol. 1, sections 2.3.5 and 3.2.4, it is stated that, in a detailed characterization of the Rose creek valley aquifer in 2001, contaminants from the tailings impoundments were found beneath the tailings, but not down-gradient of the area. Common sense suggests that the contaminant plume is already moving, albeit slowly. Therefore, in the proposed activities outlined in Vol. 1. section 2.2.2.3.1 (p. 61) "Rose Creek Valley - Site Characterization", the proponent should undertake studies to better define the rate and direction of contaminant migration. In particular, the proponent should consider the siting of monitoring wells along the Rose creek diversion channel in order to detect any potential lateral migration of tailings leachate from the impoundments directly to the channel. The plan of groundwater monitoring sites shown in Figure 4.13 of Vol. 2 shows that this area is under-monitored. A monitoring well located at the intersection of the old Faro creek channel and the original Rose creek channel, and near the diversion channel, may be especially revealing given the poor quality of groundwater observed in well P96-8A/B situated uphill in the old Faro creek channel (Vol. 2 sec 4.2.7.3 "Pits and Rock Dumps", p. 4-46).

In Vol. 1, section 2.3.7 (p. 25) " Water Balance and Contaminant Loading" (see also Vol. 2 sec. 4.2.10 and Appendix A), it is found that the model significantly underestimates sulphate and zinc loading at monitoring location X14 downstream of the mine area, suggesting unknown or imprecise source terms. It is recommended that the proponent refine its study of source terms, including the possibility of lateral

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contaminant seepage from the tailings impoundment to the Rose creek diversion channel, as suggested above. The concern is that baseline characterization studies available to this reviewer (I have not seen the 2002 draft report by Gartner Lee Ltd. "Rose Creek Tailings Facility 2001 Hydrogeology and Geochemical Investigation") seem to focus on the longitudinal movement of groundwater contaminants along the Rose creek valley aquifer at the expense of possible lateral movement across the valley and into the diversion channel.

Seismicity

The documents give a good summary of the history of expected earthquake shaking values for the site. No new information has arisen to suggest that the seismic design levels used were deficient.

4.2.3.5 Fault movements.
As discussed below, these are considered to be of sufficiently low probability to be ignored in practical terms.

4.2.3.6 Seismicity.
As the report points out, there is little disagreement on the 1/475 and 1/1000 year shaking levels. In our experience with the GSC's 4th Generation seismic hazard model, choosing a MCE based on doubling the shaking from the 1/475 year shaking gives shaking appropriate to about 1/2500 years. The Klohn deterministic estimates represent reasonable (but possibly unconservative) scenarios (M6.5 on the Tintina fault and M6 on local faults). Actual shaking could be stronger, as M7 on the Tintina and M6 1/4 to 6 1/2 on the local faults might be considered plausible (a M6 1/4 could be generated from a fault as short as 10 km, as the 1989 Ungava earthquake showed). But these events might be extremely rare, and of sufficiently low probability to be ignored in practical terms.

Mineral Deposits

It is NRCan's understanding that the documents pertain only to the continuance of the water licence(s), and that the main concern is that the actions proposed by the licence applicant to protect the environment from harmful effects are adequate for the duration of the water licence. Furthermore, part of the conditions under which a licence will be issued is that the licence holder will develop a plan for the final closure and rehabilitation of the mine site.

The Mineral Deposits specialist reviewing the documents has technical expertise in the Sedex type of mineral deposit, of which the Faro, Grum and Van Gorda deposits are examples, and on the thermochemical modeling of mineral-water interaction, which is the fundamental process controlling the composition of natural ground water and surface water. NRCan's expert has only a cursory first-hand experience with the Anvil Range deposits, having last made a visit in the mid 1980's. NRCan does not have access to various reports and studies cited in the documents. With this very limited background knowledge, NRCan's comments therefore can be only at a very general level. Comments here are restricted to those parts of the document to which these fields of technical knowledge apply, and are mainly restricted to inorganic chemical and mineralogical considerations.

1. Geological and geochemical characteristics of Sedex deposits.

Sedex deposits are formed by submarine hot springs that vent in a sedimentary basin; and typically consist of beds that are enriched in sulphides and other hydrothermal products that are intercalated with normal sedimentary rocks. Metals in the sulphide component are mainly iron, zinc and lead but may also contain subordinate to trace amounts of other metal sulphides and sulphosalt minerals containing copper, arsenic, silver, cadmium, mercury, antimony, and bismuth. Other hydrothermal products are typically silica, carbonates of calcium, iron, magnesium and manganese, oxides of iron and manganese, and

barium sulphate (barite). Elements that may be enriched above their normal background concentrations in sedimentary rocks in the vicinity of Sedex deposits include phosphorus, but other elements with toxic properties such as nickel, chromium and cobalt typically are not., though elevated concentrations of thallium and selenium have been recorded for some deposits. The sulphide-rich assemblages at the Faro, Grum and Van Gorda deposits consist of pyrite (FeS_2), sphalerite (ZnS) and galena (PbS), with variable amounts of pyrrhotite (FeS) and magnetite (Fe_3O_4) and subordinate amounts of arsenopyrite (FeAsS)and chalcopyrite ($CuFeS_2$) (Jilson and Jennings, 1987). Other hydrothermal products are quartz (SiO_2), barite ($BaSO_4$), calcite ($CaCO_3$); dolomite ($(Ca,Mg)CO_3$), and ankerite ($Ca(Fe,Mg,Mn)(CO_3)_2$) (Jilson and Jennings, 1987).

Sedex deposits are typically mineralogically and chemically zoned about the hydrothermal vent conduits and results in different facies of hydrothermal products. At the Faro, Grum and Van Gorda deposits, numerous different sulphide-bearing facies are recognized, of which the following six are the most common (Jilson and Jennings, 1987).:

i) Massive pyritic sulphides;
ii) Baritic massive pyritic sulphides;
iii) Carbonate-bearing massive pyritic sulphides;
iv) Pyrrhotitic massive sulphides;
v) Ribbon-banded graphitic pyritic quartzite;
vi) Pyritic quartzite

The repercussions of this zonation is that waste dumps may be compositionally heterogeneous, with different parts of the dumps consisting of materials extracted from different parts of the deposit.

1.1 Comments regarding the Anvil Range mining area.

1.1.1 The chemical and mineralogical zonation of Sedex deposits means that samples from one part of the mined area are probably not representative of the area as a whole. To mitigate against the possibility that there are elements with high toxicity present that require special attention the tailings ponds in particular should be sampled at different localities and different depths and analysed for their complete chemical composition. The presence of Pb, Zn, As, Cu and Ag is known from the ore mineralogy, but NRCan could not find any record for a multi-element chemical analysis save those for 17 elements for six soil samples from two areas (Table 4.33).

1.1.2. The tailings ponds are suggested as the prime site to chemically characterize the mine waste products because they represent a concentration and an averaging of the hydrothermal products from different parts of all deposits.

2. Chemical environmental impacts from the mining of Sedex deposits

Mining in itself does not manufacture or introduce any new chemical compounds. All it does is to redistribute rocks and minerals that occurred naturally at the mining site. Some chemical compounds are introduced in the way of building materials, machinery, and fuel (usually diesel). The milling and beneficiation processes introduces reagents for the flotation process. The types of reagents used at the Faro mill are not listed in the documents but cyanide, xanthates, glycols are mentioned (Vol. II p. 4-82) but it is not clear whether they were analyzed for in the baseline studies. Remnant reagents are likely present in the tailings ponds. The main chemical environmental impacts from the mining of metalliferous sulphide ores is the generation of acid and the increased mobility of metals that results from the oxidation of these sulphide ores by atmospheric oxygen and meteoric water.

2.1 Weathering and oxidation rates.

Sulphide minerals are inherently unstable in the atmosphere, especially in the presence of water, where they react with oxygen and/or carbon dioxide to form sulphates, oxides, hydroxides and/or carbonates. These reactions take place naturally where sulphidic rocks outcrop or subcrop as a result of normal weathering processes. In the subsurface below the water table, the supply of oxygen is so limited that the oxidation of sulphides is negligible except locally along fractures or faults that serve as groundwater recharge channels by meteoric water. The time required to completely oxidize a sulphide deposit to the depths of the water table in temperate climates is usually in the orders of 10^5 to 10^6 years.

The main environmental impact of mining stems from the breaking up rocks from the subsurface and redistributing them at the surface as waste dumps and tailings ponds. The combination of a) the greatly increased area of reaction surface in the piles of broken rocks and disaggregated tailings; b) the greatly increased permeability of the rock mass in the waste dumps and tailings ponds due to the loose packing of the rock fragments; and c) the redistribution of rocks to above the water table; greatly accelerate oxidation and weathering rates by allowing the almost unhindered flow-through of oxygenated meteoric water. The writer does not know the acceleration rates involved, but from his experience with 1000-2000 year old mine dumps would estimate that weathering and oxidation of mine dumps is at least 100 times faster than the weathering and oxidation of unbroken rock above the water table.

2.1.1. Comments regarding the Anvil Range mining area.

It might be expected that the accelerated weathering and oxidation of sulphides in the present mine dumps and tailings ponds , if left undisturbed, will continue for the next several 10^3 years. An estimate of the expected time for complete oxidation under current climatic conditions requires a quantitative study of current processes in the tailings ponds and mine dumps.

2.2 Acid and sulphate generation

Oxidation of sulphide minerals, particularly pyrite, usually results in the creation of acid sulphate subsurface waters:

$$FeS_2 + 3.75O_2 + 0.5H_2O = Fe^{+++} + 2SO_{4--} + H^+$$

The capacity of natural shallow groundwaters and surface waters to transport metals is generally dependant on pH (e.g. Seal et al., 2000), and thus acidic water discharge from a mine site may transport concentrations of metals into surface drainage systems or into subsurface aquifers that are high enough to produce toxic effects on the environment.

Although the oxidation of monosulphides may be overall neutral with respect to acidity: e.g.

$$ZnS + 2O_2 = SO_{4--} + Zn^{++}$$

or even consume acidity:

$$FeS + 2.25O_2 + H^+ = Fe^{+++} + SO_{4--} + 0.5H_2O$$

the oxidation process consists of stepwise reactions e.g.

1. $ZnS + 2H^+ = Zn^{++} + H_2S$
2. $H_2S + 2O_2 = SO_{4--} + 2H^+$

Dissolution of sulphide minerals consume acidity. Oxidation of aqueous sulphide species produce acidity. Because the water-mineral system is dynamic (due to the water movement) and these different reaction may proceed at different rates, the pH of subsurface waters are likely to vary from place to place and from time to time and not show a high correlation with sulphate content.

Dissolved ferric iron is more effective than atmospheric oxygen dissolved in meteoric water in oxidizing pyrite:

$$FeS_2 + 14Fe^{+++} + 8H_2O = 15Fe^{++} + 2SO_{4-} + 16H^+$$

but because high concentration of Fe^{+++} require low pH and the rate of replenishment of ferric iron:

$$Fe^{++} + 0.25O_2 + H^+ = Fe^{+++} + 0.5H_2O$$

may increase 100 fold if catalysed by the Thiobacillus ferrooxidans bacterium (Singer and Stumm (1970), rates of oxidation may vary with pH and nutrient supply as well as with oxygen supply.

2.2.1. Comments regarding the Anvil Range mining area.

2.2.1.1. The variability in the mineralogical composition of the surface dumps and tailings ponds and the variability induced by reaction kinetics in a dynamic system are probably the main reasons for the variability in the pH and chemical composition of effluent from different localities in the dumps and tailings ponds. The general pattern of variation within a relatively small range punctuated by spikes of abnormally high or low concentrations of hydrogen ion and the various chemical components shown by the graphs in Appendices B, D, F, and H are to be expected from this variability. Spikes are likely due to response to a rapid but short-lived change in the system e.g. the first rainfall after a period of dry weather which dissolves soluble sulphate salts precipitated during the dry interval.

2.2.1.2. In order to assess the total acid and sulphate generation potential of the dumps and tailings ponds, the average quantitative mineralogical composition of both should be determined.

2.3 Acid consumption

Apart from the dissolution of sulphides, acidity is also consumed by other reactions, such as the dissolution of carbonates e.g.:

$$CaCO_3 + H^+ = Ca^{++} + HCO3^-$$

Or in the production of clay minerals by the hydrolysis of rock-forming silicates e.g.

$$2KAlSi_3O_8 + 2H+ + 9H_2O = Al_2Si_2O_5(OH)_4 + 2K+ + 4H_4SiO_4$$
(K-Feld) (Kaolinite).

The amount and rate of hydrogen ion consumption by these reactions is also likely to vary from place to place depending on the composition and the reaction surface area of rocks in the subsurface.
The escape of dissolved CO_2 from surface water into the atmosphere consumes hydrogen ion and can lead to ultra high pH:

$$HCO_{3-} + H^+ = CO_2 + H_2O$$

2.3.1. Comments regarding the Anvil Range mining area.

2.3.1.1 The presence of carbonates, especially calcite, as a hydrothermal product in the Anvil Range ores, is a positive factor in helping to minimize the acid generated by sulphide oxidation in the waste dumps at least. Again, a knowledge of the quantitative mineral composition of the dumps and tailings ponds is necessary to determine the capacity of the natural calcite content of the ores to neutralize acid generation, a factor that should be considered in plans for the long term remediation of the mining site. However, the heterogeneity of the dumps and tailings ponds may make a reliable estimate impracticable. This may have already been done (Table 4.30, Part II) but mineralogical compositions of the rock units are not reported.

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2.3.1.2. In order to assess the total acid neutralizing capacity of the dumps and tailings ponds, the average quantitative mineralogical composition of both should be determined.

2.3.1.1. The effect of CO_2 degassing to produce the relatively high pH for the high Zn content of the surface waters of the flooded Faro open pit (Vol. II, Appendix B) should be considered in interpreting these data.

2.4. Metal mobility

Within the dumps and tailings ponds, the maximum concentration of simple metal cations in the subsurface waters can be expected to be mainly controlled by the solubility of the stable metallic mineral and pH. For most metallic minerals the concentration of the simple metal cation increases by an order of magnitude or more for every pH unit decrease. Sulphide minerals are virtually insoluble at neutral pH, but oxidation alteration products of sulphide minerals (sulphates, carbonates, oxides and hydroxides) are generally more soluble. In solutions with relatively high sulphate contents but low contents of other anions, the stable minerals are likely to be various jarosites; anglesite (PbSO4) or, depending on CO_2 content of the waters, cerussite (PbCO3) for lead; smithsonite ($ZnCO_3$), hemimorphite ($Zn_4Si_2O_7(OH)_2 \cdot (H_2O)$) or hydrozincite $Zn_5(CO_3)_2(OH)_8$ for zinc; and various oxides and hydroxides for iron. Zinc sulphate and copper sulphate is much more soluble than lead sulphate.

The maximum concentrations of total metal in solution is also controlled by the presence of other chemical compounds in solution that form aqueous complexes of the metal. Chloride is perhaps the most effective inorganic ligand , but sulphate and bicarbonate are also known to form aqueous complexes of metals and so greatly increase the solubility of metallic minerals. Although lead forms a more stable aqueous complex with sulphate than does zinc, the low solubility of anglesite compared to zoncosite ($ZnSO_4$) is probably the main reason for the high Zn:Pb ratios of the waters draining from the Anvil Range dumps and tailings ponds. In sulphate solutions galena (PbS) is more soluble than sphalerite (ZnS), and thus the mobility of lead has to be considered waters with low oxygen content.

For systems in which pH fluctuates, solutions may undergo repeated cycles of saturation and undersaturation. Precipitates formed during the saturated part of the cycle may remain in suspension as fine particulates or colloids. Under these circumstances, measurement of total metal in the water, and not just dissolved metal, is a more accurate measure of metal mobility and dispersal. During the undersaturated part of the cycle, the metal content in solution may largely be determined by adsorption kinetics of substrates such as ferric hydroxides.

2.4.1. Comments regarding the Anvil Range mining area.

2.4.1.1. To understand the chemical processes that are operating in the tailings ponds and dumps and their consequences to metal mobility, the quantitative mineralogy of reactants and products has to be documented, in order that the proper long term remedial actions are appropriate.

2.4.1.2. Similarly, if the Faro pit is a potential repository for the long term remediation of the tailings and sulphide-rich dumps, then the evolution of the water column in the pit should also be studied and understood, especially with regard to subsurface discharge from the pit.

2.4.1.2. Sampling and analytical methods for total and dissolved metals are not described, save that metals are analyzed by atomic absorption methods. It is assumed that sampling and analysis have been carried out using approved methods.

2.4.1.3. The allowable metal concentrations in waters (as per water licences) seems high in comparison to the acute and chronic toxicity levels for aquatic ecosystems (Smith and Huyck, 1999) and may want to be reviewed.

2.4.1.4. Establishment of background levels for metals in stream sediments (Vol.II, p.4-95) seems to neglect the effects of airborne dispersal of dust from the mine site by the prevailing south-easterly wind. Although the outcropping of a large sulphide body probably produced a natural soil and stream sediment geochemical anomaly in the area, perhaps stream sediments and soils should be taken from areas of similar geology upwind of the mining operations to try to more firmly establish the impact of the mining activities.

3. General Comments and Conclusions.

The baseline environmental information contained or referred to in Vol. II obviously represents a great amount of effort and a large amount of data. The author(s) of the report are to be congratulated on the formidable task of collecting, integrating and tabulating the data presented. Equally obvious is that the time required to absorb and become familiar with the full extent and the contextual meaning of the data is beyond the time limits imposed to NRCan.

For the purposes of the care and maintenance of the mining properties and the protection of the environment from harmful effects during the tenure of the water licence, the procedures and monitoring proposed by the applicant would seem to be satisfactory in that they appear to be a continuation of past practices that that have achieved results that are compliant with existing regulations.

For the purposes of gathering data need to develop a final closure and rehabilitation plane, NRCan is of the opinion that additional investigations and information are needed above those mentioned in the documents. As they now exist, much of the waste sulphide and toxic metal content is stored above the water table. Consequently will be subject to high oxidation rates and hence acid production and toxic metal dispersal rates that are higher than those that would have occurred if the mineral deposits had not been disturbed by mining. The problem is exacerbated because much of the sulphide waste (tailings pond) is stored in a natural drainage channel (Rose Creek Valley) and the open pit and some of the waste dumps are also situated in a natural drainage channel (Faro Creek). The current remediation methods of artificial diversion of these drainage channels is unlikely to be a satisfactory long term measure because it is contrary to natural erosional equilibria, and unless continual maintenance and repair of these artificial drainage channels is continued in perpetuity, mine waste will eventually be eroded and carried down stream. In order to investigate various alternatives for the permanent closure of the mine site, a knowledge of the oxidation, acid production and metal dispersal rates, and the total capacity of the mine waste products to generate acids and liberate toxic mnetals must be known. If the aim is develop a remediation plan that retards acid production and metal dispersal rates to those that would have occurred naturally had the mine not been developed, or to rates that give acid and metal concentrations compliant with existing regulations, then additional information is needed on natural levels of acidity and metal contents of waters, soils and stream sediments that existed prior to mining activities. Because mine workings penetrate bedrock aquifers, data also needs to be gathered on bedrock aquifer flow rates especially in connection with remediation of the open pits.

It is therefore suggested that in addition to the work already proposed during the tenure of the water licence, the following data also be gathered:

1. An assessment of the quantitative mineralogy (both primary and secondary minerals) of the tailings pond and waste dumps be carried out in order to be able to develop realistic models of rates and levels of acid generation and toxic metal liberation under different storage scenarios can be carried out. This will presumably entail the drilling sampling holes into at least the tailings pond.

2. In order to determine the natural background levels of pH and metal contents of waters, and metal contents of soils and stream sediments, sampling of these media be carried out away from the influence of wind borne dust from the mine site. Presumable this will be in the north-east quadrant away fropm the mining sites or else in areas of similar geology distant from the mine sites.

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3. Investigation of bedrock aquifers, especially in the area of the Faro pits, to assess the importance of these aquifers to metal dispersal. This information would also be required if the storage of tailings in the Faro pit is a option to be considered. It is also required to understand processes (Appendix B) within the water column of the pit, especially bedrock recharge and discharge.

References cited.

Jennings, D. S and Jilson, G.A.
1987: Geology and sulphide deposits of Anvil Range, Yukon; In Mineral deposits of Northern Cordillera. J. A. Morin (editor), Canadian Institute of Mining and Metallurgy. : Special Volume 37, p. 319-361.

Seal, R.R., Hammarstrom, J.M. Foley, N.K and Alpers, C.N.
2000: Geoenvironmental models or seafloor base- and precious-metal massive sulfide deposits; Proceedings 5th International Conference on Acid Rock Drainage, p.151-160.

Singer, D.A. and Stumm, W.
1970: Acid mine drainage - the rate determining step; Science, v. 167, p.1121-1123.

Smith, K.S. and Huyck, H.L.O.
1999: An overview of the abundance, relative mobility, bioavailability, anfd human toxicity of metals; in The environmentyal geochemistry of mineral deposits, Part A, Processes, techniques, and health issues; G.S. Plumlee and M.J. Logsdon (editors), Reviews in Economic Geology, V.6A, p.161-182.

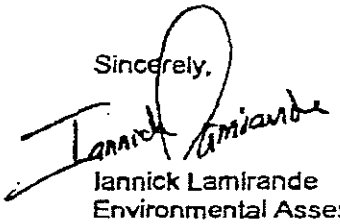
Acidic drainage effluent and treatment, waste rock and tailings disposal and management.

The current method of "collect-pump-and-treat" combined with a risk–based management program appears to be maintaining the effluent discharge at acceptable levels with respect to zinc concentration. The lime treatment process used to treat the collected water is a sound approach in terms of lime usage, metal precipitation and sludge volume. However, data provided to assess water discharge to receiving environment is not clearly presented (i.e. the points of entry of the treated mine effluent to the receiving waters).

The treatment method as currently applied would have to run in perpetuity, with associated high costs and high risks. However, this current mode of care-and-maintenance for treatment of effluent is sufficient until moneys can be found to perform the proper corrective actions to reduce or prevent acid generation and metal leaching. Future reclamation of the site would have to consider the issues of the waste rock dumps, talling impoundment and general site restoration. The stability of the pit walls, dams and diversions is a real concern and frequent monitoring of these sites is needed until reclamation measures are taken.

If you have any questions please do not hesitate to contact me by phone at (613) 996-0055 or by e-mail at Iannick.Lamirande@NRCan.gc.ca.

Sincerely,



Iannick Lamirande
Environmental Assessment Officer

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Your file - Votre référence

Our file - Notre référence
5510-5-002J

September 20, 2002

Ms. Shannon Glenn, Manager
Deloitte & Touche
Enterprise Risk Services
Suite 1400, BCE Place
181 Bay Street
Toronto, ON
M5J 2V1

Dear Ms. Glenn:

Re: Anvil Range Mine Complex - Water Licence Renewal, Possible CEAA Exemption

We received your letter dated August 29, 2002 requesting an exemption from a screening under the Canadian Environmental Assessment Act (CEAA) for the above mentioned project. The Responsible Authorities (RAs) have reviewed your request and have determined that this project is not exempt from an environmental assessment under CEAA. The reason an environmental assessment under CEAA is required is that the primary undertaking of the proposed project, care and maintenance and other site activities, is fundamentally different than the operation of a mine which is presently licenced under QZ95-003(Faro) and IN89-002(Vangorda).

In light of the above you should continue as planned with the preparation of the Environmental Assessment Report. Where possible and applicable, information from the previous assessments will be used to facilitate the process.

Please contact Leslie Gomm at 867-667-3865 to discuss this matter in detail.

Sincerely,

Leslie Gomm, P.Eng.
Manager, Project Assessment

c.c. Bill Slater, DIAND Water Resources
Sandra Orban, DFO
Benoit Godin, Environment Canada
Sarah Kalff, DIAND Headquarters
Hugh Copland, Pipeline Prep. Unit

Canada

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Environmental Protection
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October 15, 2002

4484-34/ A293

Leslie Gomm,
Environment Directorate
Department of Indian Affairs and Northern Development
310-300 Main Street
Whitehorse, Yukon
YIA 2B5

Dear Ms. Gomm,

Re: Deloite & Touche Supplemental information -Project Description -Comments

Thank you, for forwarding us a copy of the supplemental information to the project description and thank you to Deloitte & Touche for the prompt response. We are now in a position to provide you with comments on both the supplement and the project description.

The Project Description Supplement document aims to address two questions, mainly: what is the technical analysis of the 1996 ICAP to support the Project Description of May 31, 2002, and; what is the management context for this project.

The 1996 Integrated Comprehensive Abandonment Plan (ICAP)

Deloitte and Touche (D&T), the Interim Receiver for Anvil Range Mining Corporation, indicated that there are several information deficiencies in the ICAP which needs to be addressed with more detailed information, such as :

a) detailed engineering for construction of physical facilities;
b) clearer identification of where the contamination is in the rock dumps and down-gradient from them;
c) detailed geotechnical investigation;
    1) of the routes for any realignment of the Faro or Vangorda diversions,
    2) for the design of the Faro pit plug dam,
    3) for the foundation of the treatment plant
    4) to assess requirements for how to ensure the long term stability of the Intermediate Dam.
d) water balance in both watersheds;
e) feasibility of moving the tailings now that the mill is not operating.

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These items indicate a misconception of the necessary next steps for closure planning at Faro. They are things which will or may need to be further investigated -depending on the conceptual approach agreed to by the regulators. The ICAP was not intended to include detailed engineering design work because it was recognized that the basic approach needed to be affirmed first. We only need to do enough work to know that something is feasible and to estimate of the likely range of costs. It is in the next step that the detailed information for implementation is needed for those specific issues that are agreed upon.

A strategic approach needs to address some key issues on the feasibility of some aspects of the site decommissioning. D&T suggests that the rationale behind several decisions made in the ICAP were weakly supported. They also cite some examples of other projects whose results were not known in 1996 and which may have a bearing on the assessment of the feasibility of some aspects.

In particular, D&T suggests:

f) that the rationale in the ICAP , for making the Faro pit a contaminated pit, is weak. They do not say whether they believe the same is true for the Vangorda pit but we could probably assume yes;

g) the Vangorda and Grum pits are filling with water at much faster rates then the ICAP assumed;

h) that the findings of the 2001 tailings groundwater investigation has a bearing on the consideration of tailings abandonment options but it is not stated why;

i) that several technical appendices are missing from the ICAP , particularly relating to site geochemistry;

j) that the modeling for the dumps in the ICAP was 'worst case';

k) that back-filling of waste rock to pits maybe more cost-effective than long term treatment and collection of rock dump drainage;

I) that experience with sulphide cells at rock dumps has indicated more problems than anticipated;

m) that the water treatment implications of any tailings relocation activities were not considered.

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The substantiation of those claims may require some work, either from a review point of view of the data and studies previously performed, or specific studies on determined critical issues. Expert judgment should be exercised in assessing their significance without re-visiting the relevant portions of the ICAP and doing some investigation of the relevance of the experience at other sites. Several of these considerations implicate other aspects of the decommissioning through linkages -i.e. contaminated Faro pit means Faro diversion must be permanent. Assessing the strength of these claims will take time but we must be able to answer them directly and factually. For example, with respect to item 'm', the liming of the relocated tailings was included as part of the tailings reprocessing and in our view the requirements will be similar whether the tailings are reprocessed or not. One gap we acknowledge is more consideration of the need to deal with the potential for zinc flushing to the tailings aquifer if hydraulic means are used to move the tailings.

Management Structure

The Project description and the Supplemental information indicate the responsibility of the Receiver in relationship to the court proceedings as a result of the Bankruptcy and Insolvency Act. DIAND is also a responsible authority as per section 5(1) (b) and Section 5(1)(d) of the Canadian Environmental Assessment Act. As described in the Supplement page 2: "It is important to note that the ability of the Interim Receiver to carry out the studies and activities proposed in the project description are dependent on the ability of funding for this project." It is evident that all the activities at the Faro mine site are dependent on Federal corporate direction to the Receiver.] DTA

The Receiver has indicated several times that the property is non-economical, and that the chances of the property reverting to regular mining operations under the management of private mining company are nil. As the assessment responsibilities under section 5(1)(d) of CEAA are to be transferred to Yukon Government upon Devolution, DIAND still remains a Responsible Authority for the funding trigger under CEAA or under the new environmental assessment regime post-devolution. The remediation of the land is still under federal obligation under the Devolution Transfer Agreement as indicated in Appendix H Section F. Our view is that Strategic Planning on the site is currently the responsibility of the Federal Government and in this case the Department of Indian and Northern Development and not the court appointed agent. While the Receiver has to maintain the site and authorizations in good standing until the Receivership windup, the Federal Government should provide the corporate direction as the property will eventually revert to the Crown. | DTA

Decommissioning

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The Development of a final decommissioning plan for the Faro/Vangorda minesites will require: a) close consultation with regulators and other key stakeholders; b) a strategic approach which carefully assesses what we already know and what we need to know and sets priorities for early action.

Historical circumstances and past decisions have meant that the Faro/Vangorda minesites have had no meaningful longterm decommissioning components implemented since the mine first opened 33 years ago. There have been many false starts to the development of decommissioning plans although several plans have been conceptually proposed over the past 20 years. Fortunately, for the most part, the day to day environmental management of the site has met regulatory requirements. Nonetheless conditions at the site *are* deteriorating, some components faster than others, and the environmental liabilities and risks *are* increasing each year that action is delayed. It is our assessment that the Project Description falls short of outlining a reasonable path forward in the following aspects:

Multi-stakeholder Participation

The program of studies outlined in the Project Description were not developed with any meaningful consultation with the regulators or other key stakeholders. Perhaps the Project Description was intended to launch that consultation however in our view the process would have gotten off to a more effective start had consultations preceded the development of these plans. This has resulted in a Project Description which has not adequately taken into account, for example: what is already known at this site; what the objectives of decommissioning should be; what has been previously proposed and rejected.

A Strategic Approach

The Project Description proposes to look at several decommissioning options for all the components of the entire Faro/Vangorda site over the next 6 years. Obviously it is not clear at the end of these studies what the actual proposed decommissioning implementation schedule might be nor whether further delay for additional research will be requested. We request that a more strategic approach be taken which incorporates significant elements of progressive reclamation. Development of a strategic plan would require: a) assessing whether stakeholder consensus is achievable on acceptance of some of the decommissioning options which have already been proposed but not yet authorized; b) assigning priorities to site components based on an assessment of the environmental risk; c) identifying other site components necessarily linked to those priorities; d) once site components are prioritized and linkages identified a conceptual workplan can be developed which accelerates the design and implementation for high priority components; e) outlines a program of studies to clarify the design approach for medium risk components, and; f) low risk components may also incorporate research

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elements. Once the strategic plan is developed on a conceptual level regulatory authority to proceed would be sought. In order to achieve this Canada needs to provide leadership and direction.

Should you have any questions, please do not hesitate to contact me at (867) 667-3402.

Yours truly,

Benoit Godin, Head
Environmental Contaminants

Att.

cc: Robert Lauer -DIAND, Financial Analysis and Royalty Administration, Ottawa
Erik Val- DFO, Habitat, Whitehorse

Appendix

Detailed comments for assisting in the Environmental Assessment Guidelines and the Development of a Strategic Approach to decommissioning

Part A) Response to D & T Project Description -May 31,2002 (v. I of II)

Environment And Management Purpose (page 2)
The Receiver lists the intent to undertake " ...scientific and engineering studies related to the preparation of a final closure and reclamation plan for the property, and...to prepare a final closure reclamation plan. .." during the 2002 -2008 timeframe. We question whether these activities correctly fall under the mandate of the Receiver to care and maintain the properties in the interim until such time as the corporate structure and claims against Anvil Range Mining Corp. are finalized.

Faro Mine Site Water Quality -Rose Creek Tailings (p. 20)
Seven observations are presented from the results of the draft 2001 report on the hydro geochemistry of the tailings. There are several additional observations which should have been highlighted as they are of some relevance for weighing the implications of the current proposals. The chemical changes from 1988 to 2001 were assessed in the vertical profile of the tailings in the Original and Second Impoundments at four locations and the following observations noted: a) tailings located above the current water table elevation and/or capillary fringe have undergone a substantial decrease in pH (for example at one site the tailings at a depth of 10m went from a pH of 8.7 down to 4.8); b) at locations where the water table is below the bottom of the tailings the tailings have now undergone oxidation throughout the entire profile, and; c) in the unsaturated zone soluble zinc over 1000 mg/kg were frequently found and levels went up to 9000 mg/kg.

Water Balances and Contaminant Loading (p. 25,60)
At some point a water quality model will be required for both of these sites which demonstrates that the proposed mitigation meets the water quality objective established for Rose and Vangorda Creeks. The information to support this has improved significantly in many areas but we are concerned that the mine has not been measuring flows for several of the key contaminant loads such as X23 on an on-going basis. It is important that the model not rely exclusively on the use of average concentrations but also consider peak loads and minimum flows. In many cases, these scenarios are the most significant factors for regulators to assess whether mitigation proposals are acceptable.

Proposed Risk Based Approach (p. 34 and 59)
It is important to be clear on how the risk based approach could be applied to this site. Some elements of the decommissioning, particularly those related to physical stability

...2/

issues, will have design criteria with implicit risk criteria such as Probable Maximum Flood and Maximum Credible Earthquake. Methodologies for using Ecological Risk Assessment (ERA) to establish risk-based water quality objectives for mine decommissioning are much less well established and are more likely to be controversial. Furthermore, unlike conventional contaminated sites where the source is well defined, at a minesite the contaminants (for example dissolved metals) are typically constantly being, in effect, created through the oxidation of the sulphide minerals. Predicting the risk requires prediction of the rate of oxidation, the rate of transport and the likely impact to the aquatic receptor. Each of these elements has significant associated uncertainties. These uncertainties must be considered in light of the reality that the Fisheries Act simply prohibits the deposit of deleterious substances into fish-bearing waters. As well, the Faro license currently has a water quality objective for decommissioning based on the CCME criteria for protection of aquatic life. The Regulatory agencies need to confirm whether they are willing to consider alternative approaches for the establishment of water quality objectives for Rose and Vangorda Creeks.

Reference is made to a Level1 and Level 2 risk assessment (p. 59). Although these terms are in fairly common usage in some provincial regulations, the definition does vary somewhat from jurisdiction to jurisdiction and the CCME guidance document does not use this terminology at all. Please provide a reference for the definition of these terms.

The risk framework presented on page 34 puts communication and consultation as the last step in the process. Given that ERA is an inexact science which relies a lot on professional judgment, we would advise that close consultation with regulators will be required at many points in this process in order to ensure that the result is acceptable.

WorkPlan -Path Forward and Objectives (page 44)
The Receiver states their intent to undertake "...studies that are designed to fill identified knowledge gaps related to the closure of this property and prepare a final closure and reclamation plan on the basis of these studies." We question whether this is a legitimate role of the Receiver given the mandate they have been given on the part of the Court to act as the 'Interim Receiver' for the care and maintenance of the assets formally belonging to Anvil Range Mining Corporation until that corporate entity is formally wrapped up and all claimants against Anvil Range & or the assets (including properties) legally satisfied. We also must question whether an exercise of this nature- filling knowledge gaps -will be an inclusive process (the input of the many local technical experts with knowledge and insights concerning this property) or insular in nature such that a plan will be presented at the end of the day for Regulators and others to either approve or disapprove.

Routine Care and Maintenance Activities -Vangorda pit (page 50)

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The Receiver discusses the treatment of Vangorda pit water and indicates that one of the year 2001 activities "...included excavation of 'old' treatment sediments from the settlement pond...." Where did these excavated sediments go to?

Routine Care and Maintenance Activities -Faro Creek Diversion(page 52)
Potential activities revolving around stabilization of the Faro Creek diversion system are put forward. Can the Receiver indicate if this is a short-term or long-term objective to this work? What can be considered care and maintenance related options versus longer-term options such as might be undertaken for closure, or are the two necessarily linked? What are the design standards?

Routine Care and Maintenance Activities -Vangorda Creek Diversion Flume (page 53)
The Receiver discusses the Vangorda Creek diversion half-culvert flume and suggests that "...relocation of the Vangorda creek diversion flume will be implemented if the north pit wall fails of [sic] failure becomes imminent." Are there contingency plans currently in place to enable the Receiver to react quickly to avert danger in case of failure of the diversion flume or of the north pit wall?

Environmental Monitoring and Reporting (page 54)
The Receiver discusses monitoring of the water treatment system and the benefit of conducting "...highly accurate and reliable in-house..." analyses for zinc to assist with control of the process. Would the Receiver consider submitting the results of in-house testing in addition to the regularly-required monthly water quality result submission to the Yukon Territory Water Board?

Care and Maintenance not requiring changes to the Water Licence Terms (page 56)
The Receiver suggests it is necessary to assess "...the short term environmental impacts of the Grum waste dump sulphite [sic] cell." This needs explanation. An activity of this sort appears to be outside of the normal activities accorded to an Interim Receiver with respect to care and maintenance of assets, and as such should be reviewed by local Regulators and other stakeholders with the scientific expertise and knowledge of the site.

Care and Maintenance not requiring changes to the Water Licence Terms (page 56)
The Receiver states an intent to remediate areas of highly reactive waste rock and other reactive materials which are potentially contributing significantly to ARD generation at the site. We are supportive of the concept of progressive reclamation, particularly where direct linkages to other reclamation components are not in any way compromised by the activity addressed during the progressive reclamation process. The innoculation of highly reactive waste is a high priority item in our assessment, and viable under the current structure (with limitations). The identification of reclamation strategies to neutralize the

...4/

Environment Canada indicated to Deloitte & Touche (D&T) in an earlier request that we would like to see more evidence to support several statements in the Project Description which were used to justify the need for a new series of investigations of decommissioning options. As a result D&T produced the 16 September 2002 Supplemental report. D&T's prompt response was appreciated.

The rationale given for the need for these further studies includes: "knowledge gaps" (p. 44); "internal inconsistencies" (p. 58); "since 1996 the scientific understanding at this mine has advanced" (p. 58), and; "general knowledge and experience in mine reclamation technologies have advanced" (p. 58). The following comments are offered on the information provided by D&T in the Supplemental Report.

On page 3; the Receiver has stated their commitment to maximize the use of local expertise. How is the Receiver planning to do so for the care and maintenance project and the government for the required strategy for decommissioning?

On page 3; the Receiver states: "...the closure planning process laid out in the Project Description is a pragmatic, rational process that needs to be and will be executed [our underlining] regardless of the identity of the proponent." We find that one of the problems with decommissionning plans has been the lack of continuity with proponents. Since the Devolution Transfer Agreement acknowledges that the responsibility of the property rests with Canada until it is declared remediated, Canada needs to guide the closure planning process and not the Interim Receiver.

On page 5; the Receiver discusses the 1996 ICAP and the elimination of tailings relocation as an option due to the intention on the part of the proponent to utilize the Faro pit for storage of tailings from ore mined at underground Grum and Grizzly developments. The Receiver suggests that since the operational constraint is no longer valid, then the assumption put forth in the ICAP (ie. 'relocationg Down Valley tåílings not allowing space for arum and Grizzly tailings ') no longer constrains closure options for the Down Valley. It does open more options but does not significantly alter or complicate the concept. We read this to mean that tailings relocation could now be a priority option for closure of the Faro site.

On page 5; the Receiver suggests that the reasoning in support of the isolated pit scenarios presented in the ICAP did not clearly prove that the clean pit scenarios should be discounted. We would like to note that the ICAP did document the known primary inputs to these pits, particularly Faro, in detail. While it may be argued that some of the dump inputs were calculated based on 'worst case' techniques, it should also be noted that many of the other inputs assumed that current levels reflected steady state conditions - rather than a more 'worst case' scenario which would reasonably point to future increases in loadings.

...6/

On page 6; the Receiver has stated many times that the 2001 tailings area hydrogeological study has advanced the understanding of that groundwater system. The presumption seems to be that the results should lead us to consider tailings decommissioning alternatives which have been previously dismissed although this is not clearly stated. Environment Canada's suggests that the 2001 study simply confirmed the groundwater flow regime previously predicted by R. Nicholson's work in 1996. It does not alter the previous findings of accumulating environmental liability and risk posed by these tailings.

On page 6; the Receiver state that there are key appendices and data missing from the 1996 ICAP. It should be noted that additional materials were subsequently submitted by Anvil Range in 1997 including the missing geochemical information.

On page 6; the Receiver points out that it is important to consider water treatment costs when considering the feasibility of tailings relocation. It should be noted that lime costs were considered as part of the tailings reprocessing report prepared by Anvil Range separate from the ICAP .

On page 6; Equity Silver and Cluff Lake are cited as important examples of advances in the science of soils covers. It should be noted that Equity Silver is a good example of a site which did not perform as expected and the performance results of the recent Cluff Lake project will not be known for several years.

On page 6; Passive water treatment in pits has been the subject of some research and limited field trials. The Island Copper site was flooded with sea water (site is on the ocean) in order to try and ensure that the deeper more contaminated pit waters would not mix with the surface freshwaters in the pit. Early results were very encouraging. Recent results have led to questions of whether the separation provided by the layering will persist.

On page 6; Back-filling of waste rock to water-filled pits is certainly the preferred method for new mines which have carefully segregated acid-generating rock from non-acid generating rock from day one. This was the case at the Flambeau minesite which operated for 4 years in the early 1990s. The rock was returned to the pit immediately upon closure. It is much less likely that this is a practical and desirable option for the Faro/Vangorda waste rock dumps which are neither new nor carefully segregated.

On page 11; The identification of linkages in Tables 2.4 and 2.5 is a useful exercise but we would disagree with the conclusion that these Tables illustrate that there are significant difficulties to implement Pit or Tailings closure elements as discrete projects. For the Pits there are few elements which are actually necessarily exclusive to one

...7/

approach or the other and there maybe additional leeway in terms of the timing of implementation for a given component. The same is true for the Tailings project once the decision is made on the conceptual approach.

On page 14; the third paragraph of section 2.3 clearly illustrates a significant difficulty with the proposed approach. It invites opportunity for further delays and discounts the environmental and financial risks of further delay.

On page 16; the Receiver presents a time chart of"...planned closure studies for the Anvil Range site." It is apparent that a great deal of the planned activities duplicate previous studies conducted for the same intent of developing a closure plan. We are not sure, from review of this chart, what thought has gone into utilizing quality data from previous investigations or whether the newly planned exercise will simply 'reinvent the wheel' . For example, some of the planned closure study components are:

-"Characterize Faro Waste Rock ARD Status & Potential" -Considerable effort has been expended on this in the past and an excellent knowledge/database exists to understand waste rock and dump characteristics. What rationale is there to repeat this work?
-"Continue ARD Monitoring or Lab Studies" -Again, there has been a great deal of past effort in this regard. Why does the Receiver propose to repeat this work?
-"Complete Faro W/R Cover Tests" -We question this. Provide rationale.
-"Develop Faro Water Collection and Treatment Methods" -This seems to be the most clearly needed study component listed!
-"Complete Phase II Tailings Impoundment Study" -What is being proposed here? Why in there a need for continued study? Explanation is required.
-"Complete Tailings Cover Tests" -Is it necessary to repeat previous investigations? What is being contemplated here?

We also note, with respect to the planning chart, that there are no timelines presented. Is this an open-ended process?

On page 17; the Receiver states that through the water relicencing process "...the Interim Receiver aims to maximize...momentum for closure planning..." Is this a traditional role for a Court-appointed Receiver to undertake? Is this within the Receiver's mandate?

Ross River Dena Council

ROSS RIVER, YUKON
Y0B 1S0

PHONE 969-2278

Leslie Gomm
Manager
Project Assessment
Northern Affairs Program
345-300 Main Street
Whitehorse, YT Y1A 2B5

NOV, 0 20, 2002

Dear Sirs/Mesdames:

Re: Deloitte & Touche, in its capacity as Interim Receiver of Anvil Range Mining Corporation - Environmental Assessment related to the Renewal of the Mine Site Water License

Thank you for taking the time to travel to Ross River on October 10, 2002 to meet with Chief and Council and our advisors.

In our meeting you invited us to submit our comments on the Project Description and other matters that we want to have included in the Guidelines to be issued to Deloitte and Touche for the preparation of its environmental assessment report under CEAA.

The purpose of this letter and the enclosed comments is to respond to your invitation.

As you know, the members of the Ross River Dena Council are Kaska. The Kaska people have unsurrendered aboriginal rights, titles and interests in and to the Kaska traditional territory. The Kaska traditional territory includes the land on which the Faro mine is located.

The Kaska Dena Council and the Liard First Nation also represent Kaska people with aboriginal rights, titles and interests in and to the Faro mine lands. I wish to make it clear that this letter is not written on behalf of Liard First Nation or Kaska Dena Council. You are encouraged to contact them directly.

In our October 10th meeting you stressed that the scope of the environmental assessment process was limited under CEAA and that there may be issues that this process could not address. Accordingly, we limited our discussions on October 10th.

However, there are issues related to the water license that are beyond the scope of a CEAA environmental assessment. As part of his constitutional obligations to Ross River Dena Council and its members, we expect that the Minister Nault and Deloitte & Touche will engage in

meaningful consultations with Ross River Dena members in order to substantially address the concerns and issues which are beyond the scope of the CEAA process. This letter confirms that we are prepared to establish an agenda and process for consultation with Canada and with Deloitte & Touche to expedite the resolution of these other issues. We invite DIAND and Deloitte & Touche to contact us without delay in order to begin this work. Again we are not speaking for Kaska Dena Council or Liard First Nation.

Our comments related to the environmental assessment guidelines are enclosed. We confirm your commitment to circulate the draft guidelines and consult with us on them before they are finalized.

As you know, the community meeting planned for October was cancelled out of respect. This letter and the enclosed comments were prepared without the benefit of the input from a community meeting. Therefore, we reserve the right to forward additional concerns that may arise from a rescheduled meeting.

We look forward to receiving a copy of the completed environmental assessment report and water license application in due course.

Yours truly, Jack Caesar

Chief Jack Caesar
Ross River Dena Council

cc. Chief Daniel Morris, Liard First Nation
Dave Porter, Chairperson, Kaska Dena council
Chief Lucy McGinty, Selkirk First Nation
Honourable Robert Nault
Premier Pat Duncan
Robert Laurer, DIAND
Wes Treleaven, Deloitte & Touche
Rod Snow, Davis & Company
Ann M. Rheault, Kaska/SNC Lavalin Inc.

Non-Technical Review of Project Description and Project Description Supplement

For the Ross River Dena Council; October, 2002

Project Description

p.1

"DIAND is the exclusive funder of the site ..."

DIAND should not only fund studies, but take fiduciary obligation towards FN people (a meaningful consultation process including FN involvement IR studies, giving FN a real chance to participate in jobs, training and business opportunities, financing studies as outlined by FN to close existing knowledge gaps). The fiduciary obligation is the cornerstone of our relationship with DIAND, and is the highest obligation known in the law. The honour of the Crown is engaged here.

p.1-2

"Activities carried out:

- *As a first priority, to continue to care, maintain and protect the property and the environment*
- *To consult with stakeholders*

Stakeholders vs. parties?, who?, how?, process?, funding? The RRD/KTC are not stakeholders but parties. Stakeholders include land stewards, hunters, gatherers, fishers. The FN is entitled to its own process.

- *To carry out scientific and engineering studies related to the preparation of a final closure plan for the property*

There is a need to integrate traditional knowledge in studies. However, this raises the question about the protection of traditional knowledge. Therefore, a

Traditional Knowledge Protocol has to be prepared. Currently the Kaska Dena are in the process of developing such a protocol. It has to be determined who will be involved.

- *To prepare a final closure reclamation plan"*

Closure vs. reclamation vs. abandonment plan? Just on a general note, what will it be in the end?

p. 2

"The CEAA review is performed ..., and may involve a public consultation process."

Need for a clarification about the role of the RERC. Furthermore, on p.45 Deloitte and Touche states that it *"will involve a public consultation process"*. Please clarify.

p.10

"On April 21, 1998, Deloitte and Touche Inc. was appointed Interim Receiver..."

For how much longer will this appointment carry on?

p. 11

"The Anvil Range mine was financially important to the local and Territorial communities. In receivership, it continues to be socially, environmentally and economically important to these groups, as well as a number of others."

To clarify this point from the perspective of the Ross River Dena; the Anvil mine was from its beginning socially and environmentally important to the people. The Ross River Dena did not look for the quick money, but had to suffer the social, environmental and economic (traditional activities diminished in the area due to the mine development) consequences. For 30 years the Ross River Dena tried to "explain" the damage done on these parts of their traditional lands. Clearly, the

mine was not of financial importance to all local communities, but a place which caused from its beginning social, environmental and economic effects.

p.11

Table 1: Anvil Range Stakeholders

Where are the priorities here??? Alphabetical order is not always a mean to create justice.

p.12

"It is the intent of the receivership to restructure the TAC to reflect consultation needs..."

Who will restructure the committee? How will it be restructured? Who will approve it?

P.12

"The Ross River is a First Nations community that has not benefited from the existence of the mine, despite its location on a part of the community's traditional land ... During the Curragh-Anvil Transition, the Ross River people were promised by agreement, educational and land use funding. However, this was never realised in a material way."

And where are the consequences deriving from these statements? Does Deloitte and Touche really think that it is enough to tell about the history and then forget it for the reminder of the document?

There should be a question about how the Ross River Dena can be included more closely regarding job, training and business opportunities, as well as how studies can be carried out in cooperation with the Ross River Dena. Don't repeat the same mistakes over and over again. The way forward is to ensure that an appropriate share of contracts, jobs and training go to the RRD. These important areas of

interest must be safeguarded. Clearly, there has to be a clarification regarding the impacts and benefits for the Ross River Dena and their priority rights to managing the site, as it is an integral part of their traditional territory.

p. 12

"The Interim Receiver consults directly with its stakeholders, including the town of Faro and the Ross River community."

How does the consultation protocol look like? Does one exist? Does it take into account cultural differences, such as manners? Does it account for 30 years of neglect of what the Ross River Dena had to offer regarding the management of the mine site?

p.13

"On a project-by project basis, Environment Canada..., the Department of Fisheries and Ocean ... and YTG have and will be consulted."

The Ross River Dena/Kaska Tribal Council is an equal party to the above named regarding the management of the mine.

p.15

"Information regarding wildlife use of the mine area prior to mine development is anecdotal and largely available in a retrospective study of traditional use of the area by the Ross River Dena."

The word anecdotal distorts what traditional knowledge represents and incorporates– the knowledge of generations of First Nation peoples collected and adapted through the steady use of an area. The word anecdotal (subjective, unreliable, unbelievable) is not only incorrect, but also insensitive. Traditional knowledge, as it has been used in many studies for the Ross River Dena especially in the area of wildlife management, has even been recognised as legitimate source of information by Supreme Court decisions (i.e. Delgamuukw).

A further comment raised by committee members is that the studies of traditional use in the Ross River Dena are not retrospective, but rather put knowledge into perspective.

The following list of wildlife encounters is non-understandable. When using traditional knowledge, it is important to recognise where the knowledge comes from. We would like to know from there this info has been taken. What is the source??? Please clarify.

p.16-17

Aquatic Resources

The non-technical review group is not convinced that enough studies have been undertaken to understand sufficiently fish populations and fish health. As fish is one staple of First Nations in Ross River as also down stream, the non-technical review group would like to see studies which close existing gaps (*"The Rose creek diversion channel ... may pose barrier..."*) and which include a broader range of species (especially salmon species).

p.17

"Current groundwater quality monitoring results indicate that oxidation products ...are entering the sand and gravel aquifer underlying the tailings deposit but that these products are not observed in significant concentrations downgrading where they might impact surface water quality."

Further studies need to be undertaken, including covering a greater region for the study to ensure where the oxidations products are going.

p.27

"A study of traditional use and heritage resources of the Faro and Anvil Range areas was not conducted prior to mine development in 1968/69. A review of traditional use and heritage/archaeological resources was completed as part of an Environmental Site Assessment conducted in 1999 by Gartner Lee Limited. It was based on data from 1992 retrospective impact assessment and interviews conducted with members of the Ross River Dena community."

There are different questions and concerns regarding the above sections.

1. The study undertaken by Gartner Lee Limited is not comprehensive. As stated by Gartner Lee Ltd. the section on "Traditional Use and Heritage/Archaeological Resources" was only a small component of a broader study and presented only a general preliminary assessment. How can this study be the base for the project description?
2. Why where the findings and recommendations of the studies not outlined in this section, for example the following recommendation:

"Given that the Faro area was not checked for [heritage] sites prior to development, it is recommended that post-development heritage impact assessment be undertaken, to document existing sites before they suffer further damage through such things as artefact collecting and erosion."

p.27

"The key resources that drew the Ross River people to the Anvil Range Area included salmon, sheep, caribou, moose and fur-bearers."

The people were not drawn to the Anvil Range Area, but to Mount Mye (Names are important as they claim areas. This area is claimed for generations by the Ross River Dena.), also called the Mountain of Everything. Everything did not only include the items listed above, but also medicine, water, all kind of berries and different materials, as well as for spiritual and cultural purposes.

"Six sites within the Anvil Range area are registered in the Yukon Historic Sites Inventory database."

We would like to inform the receiver that there are great concerns that the gravesite, located at the mine site, has been damaged through road construction. Unfortunately, there have never been enough financial resources to address these concerns. Effort should be taken to investigate this matter. Furthermore, studies should be undertaken to investigate outstanding sites, which have not been identified to this point in time.

For further studies in the area, it is necessary to develop Terms of References to ensure quality research which honours traditional knowledge and wisdom, and fits the needs of scientific research.

p.29

"This work will be completed during the summer of 2002 and once completed the Interim Receivership intends to close the sale to 32081 Yukon Ltd., a company that MacMillan Mining Contractors controls."

Has this been done, and who is MacMillan Mining Contractors Ltd.?

p. 31

"To date, stakeholder relations, other than regulatory authorities (e.g., town of Faro, First Nations, etc.) have been intermittent consisting of meetings, telephone and written communications."

The question is if this communication was successful. To be successful, it does not only the attempt from one side, but also an understanding and appreciation for the other's cultural difference and limited financial and human capacities. A start

would be to build-up a communication protocol (outlining schedule requirements, continuity etc.) to which both sides can agree, and which both sides will honour.

p.31

"Communication with DIAND, both in Ottawa and in Whitehorse is frequent and comprehensive."

The Ross River Dena wished that this could be said about their communication experience with the Interim Receiver.

p.33

"During its involvement with Anvil Range, the Interim Receiver has attempted to minimise this impact by positively influencing the local economy in a variety of ways. These include:

- *Full-time employment for local individuals as site management personnel;*
- *Full-time hourly employment for two local individuals, seasonal employment (March-October) for over 30 individuals, as well as a number of summer students as required;*
- *Procurement of consulting services from a numb er of Yukon-based firms;*
- *Seasonal employment of local resources for construction and maintenance work as required;*
- *Local procurement of supplies where possible; and*
- *Purchase of electricity from Yukon Electric Power*

In addition, the Interim Receiver has assisted in the implementation of training programs for members of local communities."

We would like to know if Deloitte and Touche follow the procuring policies of the federal government regarding preferential business opportunities for First Nations and Northerners. If not, why not? RRDC directed their lawyer to ask this question in writing, and on 9 August, 2002, a letter concerning this matter was

sent to DIAND and the IR. As of time of writing, RRDC has received no response.

p.34

"It was recognised by all stakeholders, however, that a proactive, longer-term perspective was essential in managing environmental issues in a fiscally responsible manner. This would involve identifying and addressing issues that may not present an intermediate concern with respect to non-compliance but have potential to develop into large-scale, expensive problems if left unaddressed. For the Anvil Range property, these issues generally revolve around groundwater contamination and the long-term management of dams, diversions and tailing."

This statement should not only address environmental issues, or even more restricted groundwater contamination. For example, social and economic issues are also of importance (as outlined by Deloitte and Touche earlier in the paper).

Furthermore, from en environmental (and also social and economic point of view) the Ross River Dena requested for years now to fence the tailing ponds to avoid animal traffic through it. On visits, moose have been seen in the tailing ponds (some people from Ottawa were really excited about it, whereas representatives of the Ross River Dena were very much concerned) and tracks can be found frequently.

The Ross River Dena are pleased that Deloitte and Touche finally understands that it is important to plan for the future. Hopefully Deloitte and Touche will also understand over time that the mine produces not only groundwater contamination, but that other issues are at stake.

p.42

"Eric need to add a comment as to why."

Who is he and has he added the comment?

p.44

"Activities to be carried out during the 2004-2008 timeframe will include:..."

The renewable resource component is missing in the listed items.

p.45

"The CEAA review is performed ..., and will involve a public consultation process."

See comments above.

p.46

"The routine care and maintenance activities that are planned to be undertaken ..."

Why must we still hold on to maintaining and caring an environmental time bomb? Let's close it up.

p. 54

"The biological monitoring program will be conducted according to the Water Licence. This currently provides for monitoring of benthic invertebrate populations at various locations in Rose and Vangorda creeks every second year."

The biological component monitored must include more then only "*benthic invertebrate populations*". As outlined earlier by Deloitte and Touche, the Ross River Dena are relying on much more than fish.

p.55

Site Security and Access

There has to be access for Ross River Dena/ Kaska Dena to their traditional resources. The mine site cannot just be closed up. Please address this issue.

p.56

Remove Salvage and Scrap

Include the Ross River Dena - Business Opportunities

p.57

Remove unnecessary major buildings

Include the Ross River Dena - Business Opportunities

p.58

2.2.1 Proposed Stakeholder Consultation Plan

"The list of key stakeholders will be reviewed and a communication and consultation plan devised. This plan will include attendee lists, minutes and note of all communication events, as well as an annual report to all stakeholders providing a summary of key findings and appended attendee list and meeting notes. The consultation plan will be reviewed annually and revised where necessary."

We would like to gain a clear understanding of this consultation plan. Who will determine how it will look like? Who will pay for all this involvement? How will it be structured?

p.65

"The terms of reference for socio-economic studies will be prepared and will include an overview of current socio-economic conditions and assessment of effects of proposed closure measures. A contractor will carry out socio-economic studies and prepare a report for attachment to final closure and reclamation plan.

...

DIAND is the exclusive funder of the site to the Interim Receiver. Due to the funding arrangement, DIAND is also proponent on this project. Therefore, the ability of the Interim Receiver to carry out the studies described herein will be impacted by DIAND's ability to continue funding to this project."

What do these terms of reference look like? Please clarify, if the study will be undertaken, and who will carry it out? How will knowledge gaps be filled? Does DIAND still consider itself to be a proponent?

Project Description Supplement

p.1

"Specifically, it is the understanding of the Interim Receiver that additional information is being requested regarding:

- *accountability...*
- *a clarification of the extent to which existing information and closure studies will be used...*
- *Timelines and interlinkages of closure studies."*

These issues do not reflect the concerns of the Ross River Dena Council as they were outlined at the TAC meeting in July, 2002 in Faro. Please Clarify.

p.3

"With regard to continuity, the Interim Receiver will ensure that its consulting team has continuity with the engineering and environmental teams that have worked on the site in previous years and maximises the use of local expertise."

How is continuity for other parties involved in managing the Faro mine be granted? Furthermore, what are you referring to when saying "*local expertise*"?

p.3

"With respect to the short-term risks which need addressing in a given year, the Interim Receiver consults with DIAND as well as with other regulators and advisory groups as required. "

Who are these regulators and advisory groups?

p.4

Consultation structure for closure planning is currently developed

By whom is it developed?

p.4

"The outcome of these discussions as well as consultations with First Nations identified in the DTA will help identifying mechanisms for First Nations, stakeholders and public involvement in the development and implementation of a FCRP for the Faro mine."

Please clarify.

p.5

"The following paragraphs provide additional information regarding these scientific advances, knowledge gaps, and changed assumptions and indicated that the feasibility and technical merit of some closure measures should be re-evaluated prior to implementation of any closure plan."

- What are those gaps? How does Deloitte and Touche find the gaps?

Proposed EAR Guidelines

As a result of the above raised issues, the Ross River Dena and Kaska Tribal Council (RRD/KTC) propose the following points being included into the EAR Guidelines for the Faro Mine Water License in order to achieve environmentally conscious decision-making:

- First and most important of all, the Final Closure and Reclamation Plan (FCRP) must be developed in close cooperation with the Ross River Dena, as they are the people who live and use the area. The end-product (closed mine) must not be determined by the amount of money spent, but must incorporate the needs of the people who stay to use the area for the next generations.

- As a result, there has to be a reconsideration of what kinds of studies are needed. Not the studies should necessarily determine the end product, but the Ross River Dena should be consulted to what their needs and views for the Faro Mine are.

- There has to be a strong emphasis on including the RRD/KTC in the studies concluded. Terms of References must be developed which account for Kaska values (e. g. RESPECT for land and people)

- Traditional knowledge (TK) is viable and needed in order to receive long-term solutions to the current problems. When using TK, a protocol (Traditional Knowledge Protocol) has to be followed to insure that it is used correctly, and the property of the knowledge is protected for the RRD/KTC.

- Ways have to be developed to merge TK and scientific knowledge in a meaningful way.

- There is a need to evaluate cumulative impacts as well as acknowledge the complexity of the environment.

- A liaison position must be created for the RRD within Deloitte and Touche to ensure the flow of information and to build a closer and more efficient working relations. Furthermore, this allows Deloitte and Touche to learn about the perceptions and views of the Ross River Dena (e.g. facilitating cross-cultural training for Deloitte and Touche managers).

- There has to be a reconsideration of the structure and purpose of the Technical Advisory Committee (TAC) for the Faro Mine and the Regional Review Committee (RERC) to allow for an incorporation of RRD/KTC values and views to projects which affect them.

- DIAND, as the sole funder of the Faro Mine, has to provide continuous and sufficient funding to allow for a meaningful participation of the RRD/KTC in completing the study gap in the management and work at the Faro mine site.

- D&T must adapt procurement policies regarding preferential business opportunities for First Nations and Northerners.

- An Impact and Benefits Agreement must be negotiated between the governments and the RRD/KTC to demonstrate their commitment to provide employment, training and business opportunities to the First Nations of the area.

- Clearly outline the next steps regarding the water license application, the development of the abandonment plan, and the closure of the mine itself.

KEY ISSUES

1. How does the community know that they will do what they say will be done? e.g. reporting, communications, funding for technical support. Is annual reporting the only time the communities will be advised of progress?

2. Who is ultimately responsible for the site and any problems that might occur (e.g. spills, dam break, flooding, fish kill, treatment failure), during the site management period (2003 to 2008)? Who is the liable party?

3. Who is responsible for stopping the impacts and cleaning up the site? Why is it going to take 3 years to do a closure plan?

4. We would like to review a detailed operating/management plan for this facility for the next 5 years.

5. We expect the detailed license application to provide specifics e.g. volumes, definition of seasons, locations, spill contingencies, operating parameters, design criteria and drawings, sludge management plan, consultation plan, etc.

6. What process will be followed to allow RRDC to make any alterations (e.g. general operating parameters; soils excavation; treatment processes, repairs/replacements to conveyance channels or treatment plant(s), etc.); to the license during the site management period (2003 to 2008)? Does DIAND anticipate that changes to the license could trigger CEAA?

7. Will an EIA of the proposed operating plan for the license be done? If so, by who and under what process? If not, how will we know that the proposed operating activities will not cause additional impacts to the area?

8. What commitment is there that there will be money to clean up the site? How do we know the money will be there when it is needed (i.e. for the entire period of closure/rehabilitation)? Given the current annual cost of care and maintenance, why take 3 years to complete a closure plan when the money could be better used to clean the site up?

9. The scope and extent for preparation of the closure plan (i.e. detailed Terms of Reference) should be included as part of the water license application and should include consultation process, scope of EIA, alternatives analysis, testing, source of materials, responsibilities and financial commitments, regulatory framework (including expected applicability of CEAA) and proposed CEAA process if considered applicable.

10. The volume of water taking in the current license (42,900 m^3 per day) is quite large. Will the license be changed to reduce the amount of water required during the site management period (2003 to 2008)? A rationale for water requirements during the site management period should be provided with the license application, including all applicable water balance calculations.

11. The discharge criteria in the current license do not seem to apply to the groundwater under the wasterock dumps. Will the definition of waste discharge be changed to include these aquifers? Also, we expect the license application will provide a location where discharge criteria must be met for the different aquifers.

SNC-LAVALIN
Engineers & Constructors

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Certified ISO 9001

MEMORANDUM

TO:	V. Mitander,	**Date:**	07 November 2002
	Ross River Dena Council		
Copy:	A. Rheault		
	R. Snow		
FROM:	Steve Lindley	**Ref.:**	833243
Subject:	Review of Anvil Range Mining Corporation – Interim Receivership Project Description		

In accordance with the Terms of a proposal submitted to the Department of Indian Affairs in August, 2002 and clarified on 19 September, 2002, a limited review of the *Anvil Range Mining Corporation – Interim Receivership Project Description* document (Deloitte & Touche, May 2002), was conducted by SNC-Lavalin Engineers and Constructors Inc. focusing on the technical, process and regulatory issues of the two volume Project Description document, to complement the non-technical review being prepared by the Ross River Dena Council.

Our review has been organized into two categories:

A. Process and Regulatory Issues
   - Environmental assessment principles
   - Water Licence requirements
   - Site Closure and rehabilitation planning

B. Technical Issues
   - Hydrogeological issues
   - Water quality issues
   - Other engineering issues

A summary of the results of the SEL&C review are provided in the following document.

Background

The Project Description document, prepared in May 2002 by Deloitte & Touche, the Interim Receiver of the Anvil Range properties, is a summary document, the stated purpose of which is to initiate the *Canadian Environmental Assessment Act* (CEAA) review process for an application to amend/extend existing water licenses for the Vangorda Plateau mine site (IN89-002) and the Faro Mine Site (QZ95-003), issued pursuant to the *Yukon Waters Act* (formerly the *Inland Waters Act*) in 1989 and 1989, respectively. Both licences legally expire on December 31, 2003. The Faro license expiry date was set conditionally upon completion of a (presumably CEAA) trigger for review of a mine closure plan prior to that date.

These properties, located near the community of Ross River (in part) within the traditional territory of the Ross River Dena Council in the Yukon Territory, were formally utilized by

Curraugh Resources and (subsequently) the Anvil Range Mining Corporation for lead and zinc extraction and processing. Mining and metal processing activities were ceased at both facilities in 1997-98 shortly after the Anvil Range Mining Corporation filed for creditor protection under the *Companies' Creditors Arrangement Act*. The Ontario Court (General Division) appointed Deloitte & Touche as Interim Receiver in April 1998. The Department of Indian Affairs and Northern Development (DIAND) assumed the responsibility to provide most of the financial resources required to fund on-going activities at the site under the management of the IR.

The principal role of the Interim Receiver (IR) is twofold:

1) To manage the properties in accordance with the water licenses, providing on-going care, maintenance and environmental protection activities; and
2) To *"apply for any permits, licenses, approvals or permissions on behalf of [Anvil Range] as may be required by any government or regulatory authority."*

The IR commissioned an economic study to assess the value of the properties and the "status of the mining industry in general". Based on the findings of the Strathcona Report, discussions with various stakeholders, including the Ross River Nation and creditors, and various court hearings, it has been collectively agreed that that there is little remaining economic value in the properties as mining facilities. Notwithstanding any remaining financial obligations to creditors, it is recognized that the principal objective of the IR and all stakeholders, is to close and rehabilitate the facility in a socially and environmentally responsible manner, consistent with all applicable legislation and the objectives of affected parties, communities and government agencies. The IR states that the longer mine closure activities are delayed, the "greater the costs and risks to the environment".

Recognizing the time required to prepare a comprehensive and credible mine closure strategy/plan for these complex properties, including the compilation of reliable technical information, the IR aims to conduct all necessary studies and prepare a Closure Plan document for submission in 2006. They have estimated that a three-year period is necessary for public and government agency review, and agency approval of the Plan before it can be implemented in 2009. Based on these estimated timelines, the IR intends to apply to the Yukon Water Board for a single (combined) water license to cover all operating and management aspects of both the Faro and Vangorda Plateau facilities in the intervening timeframe between expiry of the existing licenses (say 2004) and obtaining a license specific to closure activities (in 2009).

The purpose of this review is to ensure, on behalf of the Ross River Dena Council, that the applications prepared by the IR are technically sound and meet the general objectives of the Ross River community. Their objectives are focused on equitable and representative participation in all decision-making processes affecting the properties; enhancement of environmental quality, including the protection/enhancement of natural resources which are central to the culture and economic well being of the community; and maximization of social and economic benefits (such as training, employment and contracts to provide goods and services), that are/will be made available during on-going management of the properties, as well as during implementation of closure activities.

As stated in the Project Description document, *"Ross River is a First Nations community that has not benefited from the existence of the mine, despite its location on a part of the community's traditional land."* Based on a review of available documents and discussions with

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community members, it appears that the development and abandonment of these properties has caused significant environmental, social and economic impacts to the Ross River community. The water license application and closure plan processes must ensure that these impacts are immediately minimized and ultimately discontinued.

From the perspective of the Dena Council, the water licence applications to be submitted in 2003 are integral to the mine closure process which must facilitate responsible rehabilitation of the Faro and Vangorda properties and remediation of the environment that has been affected for years.

A. Regulatory Framework for Site Management and Closure/Rehabilitation

A.1 Disentanglement of Planning/Regulatory Processes

The IR identifies two key processes that must be followed in obtaining water license extensions:

1. A review process under CEAA which is required in part, due to the disbursement of federal funds, and

2. An application to the Yukon Territory Water Board for a new license once the CEAA process is complete.

The overlap of the various regulatory processes is confusing. In our opinion there are a number of regulatory planning processes that must be followed to accomplish implementation of a closure/rehabilitation plan for the Faro mine, recognizing that site operations and management must be on-going during the closure planning and implementation process, namely:

1) Water license application process for the operational period
2) CEAA process for the current water license amendment application
3) Closure Planning process pursuant to the *Yukon Placer Mining Act* and/or other legislation governing the abandonment of mine facilities in the Yukon Territory
4) CEAA process for the mine closure and rehabilitation plan
5) Water license application process for the closure period (following the 2003 to 2008 operational period)
6) CEAA process for the initial closure period water license application (2008 to 2013?)

The process to develop a closure plan for the Faro mine is not well laid out in the document, and the distinctions between the planning process for the water license amendment and closure plan are unclear. It is recognized that the responsibilities of the IR are limited to the operation and maintenance period prescribed by the Court. It is our interpretation that the IR interprets their immediate responsibilities are to obtain an amended water license for the period 2003 to 2008; and to obtain CEAA clearance for the water license amendment for the operating period. However, the IR is also proposing to undertake a closure planning process during the upcoming period of operation and maintenance, and even to implement some physical closure activities during that period. This presents confusion as to the responsibilities of the IR and the timing and logistics of conducting the many regulatory planning processes that are necessary.

At minimum, the IR must clearly outline the anticipated scope of the various processes that must be undertaken to accomplish implementation of a closure plan in order that First Nations and

stakeholders can effectively participate. To assist participants, all statutory guidelines or standards to be followed/met should be clearly referenced. It is anticipated that these processes would include government agency, public and TAC consultation. It is recommended that a detailed Terms of Reference for the site closure and abandonment plan should be required specifically in the amended water license (Part E perhaps), including timelines for completion of the Terms of Reference, the draft document and a deadline for submission of a final closure/rehabilitation plan document to the Board. As long as the processes remain entangled and piecemeal, the RRDC will be forced to provide comments on all aspects of each individual process. This approach would likely add time and cost to a process which all participants are anxious to complete and move towards implementation.

In addition to evaluation of rehabilitation alternatives, technical details of construction and operation during the transition period, the consultation program, and the monitoring program, the site abandonment and closure plan should also provide criteria for defining the conditions under which the operator can abandon the site (and conditions for abandonment), and a commitment to provide financial resources, if necessary, including financial assurance. The Plan should estimate an anticipated period of time for active management/operation during the closure transition stage (i.e., potentially in perpetuity). The approach to ensuring financial assurance for the entire period of closure is a major issue to the First Nations and should be addressed during closure plan development.

A.2 CEAA Triggers

In accordance with requirements of the CEAA Law List regulation, the CEAA process may also be "triggered" by the requirement to obtain certain approvals under federal legislation, principally the *Fisheries Act*. According to the requirements of the *Fisheries Act*, any activity which may cause alteration, disturbance or destruction of fish habitat (HADD), requires an authorization.

It is premature at this stage to determine the potential for requiring *Fisheries Act* authorization for activities planned to be undertaken either during the closure plan study period (2003 to 2009), and/or during the 5 year operation and maintenance period to be covered by the amended water license. However, from review of the Project Description, there are several planned activities which could require *Fisheries Act* authorization during the operation and maintenance period, depending on the nature of specific activities, their location and duration, including:

- Establishment and operation of a solid waste landfill
- Establishment and operation of a bioremediation facility for storage/treatment of hydrocarbon contaminated soils
- Replacement or repairs to various diversion channels
- Re-direction of surface flows and/or alteration in discharge volumes/quality
- Enhancements, expansion or operational alterations to wastewater treatment plant(s)
- Excavation and/or placement of borrow/cover materials for testing Excavation and/or placement of borrow/cover materials for testing

The scope and extent of the CEAA process will depend in large part on the ultimate description of a number of the individual components to be carried out during the operational period of the

water license. Details of these and many other technical components of site management provided in the Project Description are not sufficient to determine the specifics of the proposed activities, the potential significance of environmental effects, or the extent of analysis and mitigation measures proposed or required.

In order for process participants to understand the necessary scope of work for the water license amendment, it is necessary to better understand the potential CEAA implications of these activities.

B. Proposed Changes to be Incorporated into the 2004 to 2008 Water Licence

B.1 Comments on Proposed Changes to Achieve a Combined License

Section 2.3 of the Project Description summarizes the proposed changes to be incorporated into the new water license. It is stated that a detailed condition-by-condition description of proposed changes will be submitted with the application, and that an overview of the each license section is provided, which is taken to refer to section 2.3 of the Project Description. It is inferred from this that those sections not addressed in Section 2.3, are not intended to be changed.

Comments on the proposed changes to the existing Faro mine site water license are as follows:

Part A -- General Conditions

Condition 6 respecting Security. It is noted that the IR will not contribute additional funds to the Trust Reclamation Security Fund. Unfortunately details of the formula established by the Courts for financial contributions to the closure of the site are not known to the Reviewer. However, in general, it would be helpful to stakeholders participating in the water license and closure plan process to have full disclosure of the extent of financial resources that are to be available for on-going management, maintenance and closure of the facility, and/or a commitment from the IR or DIAND that the resources necessary to comply with the full terms of the license and the recommended/approved closure plan will be committed to the site. This is especially important if the IR's statement, "*These funds will continue to be invested until the properties are officially abandoned*", is intended to mean that only those funds currently held in the Fund will be available for closure activities. It is doubtful that $500,000 plus accrued interest will be sufficient to rehabilitate and manage the site for the lengthy period of time necessary to achieve chemical and physical stability, a yardstick used by the Ontario *Mining Act* closure process to define "walk away" conditions.

Condition 8 respecting Non-compliance. It would be helpful to know what term will be proposed in the amended license to replace this condition, which provides for revocation of the license in the event of non-compliance. It is this condition which ensures the public that commitments made (and approved) in the license will be implemented as outlined. Without an equivalent condition in the amended license the public and stakeholders will be uncertain as to the level of commitment being made to manage the site responsibly for the period of time required to achieve "walk away" conditions.

Condition 9 respecting Waste Discharge Standards. It is assumed this condition will be carried over to the amended license.

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Conditions 13 through 15 respecting Annual Reporting. It is assumed these conditions (dates revised) will be carried over to the amended license.

Part B – Operating Conditions

Condition 18 respecting Water Taking. It is expected that the 42,9000 m^3 per day approved in the operating license will be significantly reduced in the amended license. The amount of water required to maintain and close the site is expected to be provided in detailed water balances prepared for representative stages of site maintenance and closure.

Condition 19 respecting Water Recycle. It is assumed this condition will be removed from the amended license.

Condition 20 respecting Rose Creek Diversion flows. It is expected this condition will be amended in accordance with the revised water-taking volumes.

Conditions 21 through 25 respecting Waste and Effluent Discharge Quality. It is assumed that conditions 21 through 25 will be carried over to the amended license.

In general, it is agreed that it would be beneficial for the IR to submit a detailed discharge contingency plan and operating plan for the Faro Creek and Faro Pit prior to directing discharges direct to the receiving environment.

Condition 26 respecting Maximum Concentrations It is assumed the prescribed limits will not be relaxed. These license limits expressed as maximum grab sample concentrations are less than the corresponding limits in the new Metal Mining Effluent Regulations (MMER) where the list of parameters overlap. The prescribed maximum grab sample concentration limits in the license are also less than or equal to the MMER composite and monthly arithmetic mean limits.

Conditions 28 through 35 respecting the Tailings Disposal System. It is assumed these conditions will be modified to suit the current application, and that conveyance capacity of the channels will be designed according to hydrologic modeling and water balance calculations conducted by the IR. It is agreed with the Board that a permanent closure plan for this facility be developed as soon as possible.

Conditions 36 through 38 respecting Waste Rock. It is expected that conditions 36 through 38 will be amended to suit the current application and that details of the proposed monitoring program will be outlined.

Condition 39 respecting North Fork Groundwater Contingency Program. It is assumed this condition will be replaced with an amended condition that provides comprehensive procedures and specifications for contingency planning for all aspects of site management during site maintenance (2004 to 2008) and site closure (2009 and beyond), integrated as necessary with procedures and specifications developed for the amended condition 16. The Reviewer agrees with the decision of the Board that it is not sufficient that the trigger for this condition would be "professional, subjective assessment".

Part C – Modification and Construction

Condition 40 respecting submission of designs prior to construction. It is suggested that this condition remain in the amended license and that, as prescribed by the Board, a minimum 90 day period be specified for submission of designs prior to construction. Further, it is suggested that this condition be amended to state that all designs be provided to TAC members and other stakeholders (to be specified by the applicant) concurrent to the Board for review and comment at the initiation of the 90 day review period.

Condition 41 respecting submission of a detailed construction schedule prior to construction. As required by the Board, it is agreed that a proposed construction schedule be submitted with detailed designs of proposed construction activities (as in condition 40), a minimum 90 days prior to construction, and further, that the condition be amended to state that the schedule, together with design details be provided to TAC members and other stakeholders concurrent to the Board for review and comment at the initiation of the 90 day review period.

Conditions 42 through 44 respecting implementation and reporting of construction activities. It is assumed these conditions will be carried over (amended as necessary) to the amended application.

Condition 45 respecting design criteria for seismic events. It is expected this condition will be amended (as necessary) to meet current criteria of the Canadian Dam Safety Association.

Conditions 46 and 47 respecting the Faro Pit Dam. It is assumed these conditions will not be required in the amended license. It is expected that any construction required at the Faro Pit Dam during site closure will be outlined in the closure plan and addressed in a later amendment to the license.

Condition 48 respecting activities during temporary cessation. It is assumed this condition will not be necessary in the amended license.

Part D – Reports, Sampling and Analysis

Condition 49 respecting monthly maintenance activity reports. It is assumed this condition will be carried forward to the amended license, and that it will be amended to state that monthly reports shall be made available to the TAC and other interested/affected stakeholders and First Nations.

It is agreed that an updated environmental monitoring plan is beneficial, and that a revised monitoring plan developed by the IR, should be submitted with the License amendment application for review by TC members, other stakeholders and government agencies, in accordance with requirements of the Water Board and the *Canadian Environmental Assessment Act*. The TAC, other stakeholders and First Nations look forward to reviewing the contingency plan regarding discharge from the Faro Pit as part of the application for the current license amendment.

Part E – Rehabilitation and Abandonment

This section should dictate the terms of the preparation of a comprehensive and integrated closure and abandonment study for the Faro and Vangorda sites to be reviewed by TAC

The 2002 preliminary contaminant loading study probably provides an indication of contaminant loading in its current state. It is unclear how much predictive power this model has or how the model will be applied during the water license application process. However, we suggest the model would be improved using flow weighted averages rather than simple averages for some load sources. It is also unreasonable to expect 100% correlation between measured and predicted loads when one grab sample is often used to represent 6 months of loading (a single time step in model).
If the model is to be an important supporting element of the design and operations plan for the site, it is suggested it should be refined.

Project Description Volume I; p.8 What "other sources" of contaminated water report to Vangorda pit? In what volume and at what rate?

What are the characteristics and estimated volumes of seepage from the Vangorda pit? What are the characteristics and volumes of seepage from the Seepage from Grum pit?

What is the potential for overtopping of the Grum pit?

What is the condition of the Little Creek Dam (stores runoff from Vangorda waste dump)?

Where does drainage from the Grum ore transfer pad report?

What are the "season" parameters (triggers) for the Faro pit pumping regime? How does IR determine conditions for transition from winter to Spring?

It is good that the IR is recirculating sludge from the clarifier to minimize lime use. Is there no net sludge produced which must be removed from the process? If so, where is this sludge stored?

Project Description Volume I; p.51 – Where does off-spec water from the Vangoorda WTP report? In 2002 the Vangoorda pit reached its maximum design elevation. What are the contingency scenarios for managing extreme conditions in the pit? What if off-spec is added to such an event? What if the diversion fails during high water and off-spec continues to go into pit? Contingency plans for the Vangoorda Pit should be detailed with contingency plans for other facilities in a comprehensive contingency plan document.

An erosion and sediment control plan should be developed, and it would be helpful if a water management plan was developed to help reviewers understand the complexities of water movement, treatment and discharge around the site.

The application for the amended water license must address any changes that might occur to operating conditions during the period that the license is in effect. Otherwise, it is expected that incremental amendments will be required to the license for these types of modifications. A number of options for alternative treatment schemes, etc. are littered throughout the document. Specific details of these programs, or an approach to managing these types of modifications should be included in the license application for review. Examples of the types of operating modifications we refer to include:

members, other stakeholders, First Nations, government agencies and the public, prior to approval, in accordance with the requirements of the Water Board and the *Canadian Environmental Assessment Board*. This section should also outline the process for preparation of the Terms of Reference for the site closure and abandonment study until a detailed Terms of Reference for the Plan has been prepared by the IR and submitted for review by the TAC, other stakeholders, government agencies and the public. Similarly, it is considered premature to prescribe details for sulphate removal technologies outside the context of overall site closure.

B.2 Issues Related to the Vangorda Water License

A number of issues discussed above in the context of the proposed amendments to the Faro site water license are applicable to the Vangorda license. Recognizing that the amended water license is to integrate the two existing licenses, it is considered that the issues discussed in the above section apply to the integrated water license to be developed for the two sites, with the addition of the following comments:

Conditions 4 and 5 respecting groundwater monitoring and fish monitoring. These conditions are appropriate to both sites and should be incorporated as written, into the amended license. It is expected that details of these monitoring plans will be submitted with the application for review by the TAC, First Nations, other stakeholders, government agencies and the general public in accordance with requirements of the Water Board and the *Canadian Environmental Assessment Act*. It is not agreed that groundwater monitoring locations cannot be identified prior to construction and it is expected that a proposed drilling program be included in the detailed monitoring plan to be submitted with the license amendment application.

Proposals to amend specific locations for sampling of any type specified in the previous license are expected to be outlined in the detailed monitoring plan to be submitted with the water license amendment application. These proposals can then be reviewed in the context of the overall plan.

It is agreed that a sludge management plan be developed and submitted with the water license amendment application.

Any changes or proposals related to consultation with the TAC and the public should be provided in a consultation plan covering the entire site maintenance period, to be submitted with the water license amendment application.

C. Technical Issues

C.1 Water Quality

Section 2.1.1.2 pg 47, last paragraph ***"pumping from the pit will be accomplished via an existing barge-mounted pumping system"***

We are concerned about emergency conditions and consequences of pump failure. If additional storage in the pits is not available, contingency pumping schemes must be readily available to prevent overtopping and damage to the downstream environment in the event of failure of the main pump. These contingencies should be described. Also, it is not clear what meterological conditions have been assumed for design purposes. For example, we would like to know what

storm event was considered in designing the operating parameters for the Main Faro Pit to prevent a breach of the Faro Creek diversion.

The consequences of severe meteorological conditions coinciding with a complete failure of the Faro creek diversion channel (collapse of northeast pit wall) should be investigated and reported. We would expect to see details in the documents produced. Contingency measures should also be provided in the event of failure of the wastewater treatment plant.

Section 2.1.14 pg 54, last paragraph ***"biological monitoring will be conducted according to the Water Licence. This currently provides for monitoring of benthic invertebrate populations... every second year."***

Given that metal concentrations in fish require further characterization (pg 16, last paragraph) the aquatic biological monitoring program should be expanded as was rationalized for the water quality program (as described on page 54, second paragraph of Section 2.1.1.4). Further, given the importance of the terrestrial wildlife resources to the Ross River Dena community (Section 2.3.8, pg 27), this aspect of the biological monitoring program should also be included in the formal site monitoring program. Leaving additional biological monitoring to be conducted after the completion of the gap analyses during the preparation of the EA for the proposed final closure concept (Section 2.2.3.1, paragraph 3) may preclude collection of this data during the operation and management period which might further preclude incorporation of the data into the closure planning process. It is expected that a detailed monitoring plan will be provided with the water license application. A summary of the changes in the monitoring plan from previous years would also be helpful.

Section 2.2.2 pg 58, second paragraph **"previous abandonment options need to be reassessed in an integrated fashion"**

Agreed, however the approach proposed (Sections 2.2.2.2, 2.2.2.3 and 2.2.2.4) relies too heavily on first determining preferred closure methods for each of the major areas (Faro Mine site, Rose Creek Valley and Vangorda Plateau site) independently and only then amalgamating them to a final integrated closure and reclamation plan. There appears to be opportunities to streamline the process, eliminate duplicate studies and develop better overall closure options through integration.

A description of the wastewater treatment process and operating parameters should be detailed in the licence application. We would expect to see design drawings and a design report which rationalizes all design criteria and operating parameters. Treatment commitments required (pg 3-10 1st paragraph Vol. II) as a basis to identify accountability.

Fish passage is reportedly being blocked by rock drain culverts under the haul road (3.3.2.4 page 3-8 Volume II page 4-104). This should be examined during the operation and management period and alternate methods suggested to enhance fish passage.

It is good that water quality data has been collected since the late 1990's. The data is comprehensive and seems complete. It is good that the database includes full metal scans and not merely selective metals as in earlier years.

p.48 The mill (treatment system) may be altered, enlarged or otherwise modified as appropriate to increase economic, operational and safety efficiencies
p.48 Other sources of contaminated water may be directed to the mill (treatment system) in the future where this is deemed practical and within the scope of diligent environmental management".
p.48 Implementation of variations on the contingency treatment system.
p.49 Other treatment methods might also be employed on a trial or permanent basis as appropriate to achieve efficient treatment of water
p. 53 Testing of flocculant systems in Sheep Pad Pond
p. 54 Diversion of Grum Creek into Moose Pond as a groundwater recharge scheme may or may not be continued

It is suggested that the license also be clear in providing a description as to the types of routine maintenance activities that would be expected to be conducted so that the reviewer is aware as to those activities which might be considered more significant, and thus require amendment to the license, or some alternate process which is suggested by the IR.

C.2 Hydrogeology

As is described within the document, groundwater monitoring is an integral component of the environmental monitoring plan. It is mentioned that groundwater monitoring is undertaken on a more frequent basis than is mandated by the existing water licence **(Section 2.1.1.4, Page 54)**, and that this level of effort is considered necessary for a proper evaluation of environmental effects. We concur with this approach, and further add that the evaluation of trends in groundwater quality can only be evaluated with additional temporal data.

Several reports which discuss groundwater issues are mentioned in the documentation. The most recent hydrogeological report is Gartner Lee Limited (2001) *Rose Creek Tailings Facility – 2001 Hydrogeological and Geochemical Investigation, Draft Report.* A brief summary of the findings of this report is provided in **Volume I, Section 2.3.5, page 20**. The key findings of the report are not sufficiently outlined here to provide a critical evaluation. With respect to an evaluation of hydrogeological conditions, it would be useful to have more specific information carried forward from this technical report to the Project Description (Volume I) and Background Information (Volume II) to more fully evaluate the adequacy of the description of existing groundwater conditions.

The document states that the impacts to the underlying aquifer, as measured by zinc concentrations, do not extend beyond the toe of the Rose Creek Dam **(Item 6, Section 2.3.5, page 21)**. Further explanation of the actual measurements of dissolved zinc at this location, and a discussion of the compliance boundary would be necessary for a critical evaluation. Specific criteria for groundwater quality are not outlined. It is suggested that groundwater quality should also meet the "waste discharge" criteria outlined in the licence **(Item 26 of licence)**. The current definition of "waste discharge" would therefore have to be amended to specifically include contaminated groundwater that may result from mine activities other than those stated (i.e. waste rock dumps). To implement this criterion properly, the proponent would have to also identify boundary conditions at which the criteria are expected to be met.

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In addition, there is no mention of predictive modeling of the groundwater conditions being undertaken, which is necessary to evaluate the potential for future impact to the groundwater resources.

A key area of potential hydrogeological impact is Rose Creek and the Rose Creek aquifer. There is discussion of a groundwater contingency program for the North Fork of Rose Creek (Item 39 of licence), however, the trigger program and contingencies require further development, rationalization, and description. In addition, there is no other mention of contingencies for groundwater impacts that may occur in other locations.

From the review of Volume II there is some key summary information from the Hydrogeological Investigation presented in this document (figures 4.15 to 4.18), however, these figures represent existing conditions. Future expected impacts are not discussed, nor is there any contingency plan in place to address future potential impacts. Additonally, the focus of the groundwater investigation has been on the Rose Creek Tailings Facility. Groundwater impacts from other facilities and activities of the mine site are discussed only briefly (i.e.Grum Rock Dump Section 4.2.9.2 Volume II and Vangorda Rock Dump Section 4.2.9.3). No contingencies for unacceptable impacts at these locations are discussed.

	Nov	Dec	Dec	Dec	Dec	Dec				hours	$/h	$
D. Dreyer	2	1	6	6	5	5				25	100	2500
G. Smith	1		6	6		5				18	100	1800
J. Acklack		2	6	8		2				16	80	1280
V. Milander			6	6		2				14	100	1400
	preparing and writing workplan, finalising funding proposal,	organising and preparing meeting	disscussion of revi/w groups, Chief and Council and Elders	presentation by Leslie Gomm; disscussing changes to proposal internally; including elders	writing report	review of report by team; Writing community material (newsletter)						6980
Honorarium	# of people	costs per day	# od days									$ (Honorarium)
Elders	3	175	2									1050
Translator	1	300	2									600
	km	$/km	$ (Incl. Gas)	Hotel (nights)	$/night	$ (Hotel)	Meals (day)	$/day	$ (meals)	Flight	Travel time	$ (travel cost)
D. Dreyer	840	0.65	546				6	50	300	800	1200	2902
V. Milander	840	0.65	546	3	145	435	4	50	200		600	1781
TOTAL												13313

Leslie's copy cc: Jennifer

5510-5-0025

Internal file

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TO: IAN CHURCH

FIRM: DIAND WHITEHORSE – ENVIRONMENT SECTION

RE: ANVIL RANGE MINING CORPORATION INTERIM RECEIVERSHIP

PHONE: 1-867-667-3860

FAX: 1-867-667-3216

DATE: 13 NOVEMBER 2002

PAGES (incl. Cover): 8

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13 NOVEMBER 2002

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Dear Sirs:

RE: ANVIL RANGE MINING CORPORATION

I have been asked by the Interim Receiver (the "IR") and by the Department of Indian Affairs and Northern Development ("DIAND") to outline the Ross River Kaska Dena's expectations concerning a consultative process with regard to the above-noted matter, and what we believe the legal requirements for consultation entail.

Although I am not wanting to write a treatise, it would seem important to start with the root of DIAND's obligation before we get into its substance.

WHAT IS CONSULTATION?

The British Columbia Court of Appeal stated as follows in the *Sampson* case (*R. v. Sampson* [1995 BCJ No. 2634]):

.../2

> "... no useful purpose would be served by attempting to define for general application the meaning of "consulted" as expressed in Sparrow. In our view, the determination of whether aboriginal people were consulted will depend on the facts and circumstances of each particular case."

It would nevertheless appear that a common law definition of consultation has developed as follows:

> Genuine and meaningful consultation must substantially address the First Nations concerns and endeavour to seek workable accommodation of those concerns and interests by (where applicable) allocating the resource(s) in a manner respectful of the priority of the Aboriginal interest.
>
> (see *Delgamuukw v. The Queen* [1997] 3 SCR 1010, *Haida Nation v. BC and Weyerhaeuser* 2002 BCCA 147 (aka *"Haida 1"*), *Haida Nation v. BC and Weyerhaeuser* 2002 BCCA 462 (aka *"Haida 2"*), *Taku River Tlingit First Nation v. Tulsequah Chief Mine Project* 2002 BCCA 59, *Halfway River First Nation v. BC* (Minister of Forests) [1999] BCJ 2002, *Mikisew Cree First Nation v. Canada* (December 2001 FCJ 1877) and *R. v. Gladstone* [1996] 2 SCR 723)

WHEN TO CONSULT

The *Sparrow* case (*Sparrow v. The Queen* [1990] 1 SCR 1075) indicates that the duty to consult arises where there has been a *prima facie* infringement of (an) aboriginal right(s). The consultative duty is part of the justificatory test for such an infringement. It would appear that recent case law has widened the ambit of situations in which an affected First Nation has to be consulted. That ambit now encompasses situations where a substantial unsurrendered Aboriginal rights, title and/or interests claim exists. Here, the Comprehensive Claim of the Kaska, including the Ross River Dena, has been accepted on the basis that their interests remain intact. Consultation, which includes the duty to act in the utmost good faith, must occur early in the planning process, and whether or not legislation requires it.

THE NATURE OF DIAND'S OBLIGATION

I can do little better than to quote Mr Justice Lambert in *Haida 2*, at pgh 62:

.../3

> The fiduciary duty of the Crown, federal or provincial, is a duty to behave towards the Indian people with utmost good faith and to put the interests of the Indian people under the protection of the Crown so that, in cases of conflicting rights, the interests of the Indian people, to whom the fiduciary duty is owed, must not be subordinated by the Crown to competing interests of other persons to whom the Crown owes no fiduciary duty. All the principles which must inform the tests for justification of a *prima facie* infringement, such as consultation, accommodation, and minimal impairment, represent examples of the Crown's fiduciary duty to the Indian peoples. (emphasis added).

The fiduciary duty of the Crown towards First Nations people is settled law, and can be traced back through the *Sparrow* and *Guerin* (*Guerin v. The Queen*, [1984] 2 S.C.R. 335) cases. More specifically, there is a specific fiduciary duty of the Crown to the Ross River Dena in particular (see *Ross River Dena Council Band v. Canada* 2002 SCC 54 at pgh 77). The *Sparrow* case was the first in which the idea that consultation must occur with First Nations people in situations where their rights may be affected by certain laws or actions was raised to the level of a constitutional obligation, and the *Guerin* case recognized that the interest in traditional territory is the same as the interest in a reserve (at 379).

Where, as here, Canada has formally accepted a claim to Aboriginal rights, title and interests, the nature of the obligation and the content of consultation is quite substantial, as Chief Justice Lamer held in *Delgamuukw* (at pgh 168):

> ... other aspects of aboriginal title suggest that the fiduciary duty may be articulated in a manner different than the idea of priority. This point becomes clear from a comparison between aboriginal title and the aboriginal right to fish for food in Sparrow. First, aboriginal title encompasses within it a right to choose to what ends a piece of land can be put. The aboriginal right to fish for food, by contrast, does not contain within it the same discretionary component. This aspect of aboriginal title suggests that the fiduciary relationship between the Crown and aboriginal peoples may be satisfied by the involvement of aboriginal peoples in decisions taken with respect to their lands. There is always a duty of consultation. Whether the aboriginal group has been consulted is relevant to determining whether the infringement of aboriginal title is justified, in the same way that the Crown's failure to consult an aboriginal group with respect to the terms by which reserve land is leased may breach its fiduciary duty at common law: Guerin. The nature and scope of the duty of consultation will vary with the circumstances. In occasional cases, when the breach is less serious or relatively minor, it will be no more than a duty to discuss important decisions that will be taken with respect to lands held pursuant to aboriginal title. Of course, even in these rare cases when

.../4

> the minimum acceptable standard is consultation, this consultation must be in good faith, and with the intention of substantially addressing the concerns of the aboriginal peoples whose lands are at issue. In most cases, it will be significantly deeper than mere consultation. Some cases may even require the full consent of an aboriginal nation, particularly when provinces enact hunting and fishing regulations in relation to aboriginal lands. (emphasis added)

In the present situation in Faro, we have the following factors at play:

1. The land has, since 1973, been subject to a formally recognized claim for unextinguished Aboriginal rights, title and other interests. The claim has not been settled as yet. The federal government is purporting to transfer unsurrendered traditional territory to the Yukon Government as of 1 April 2003. We consider this an act of historic bad faith. Further, we are now aware – though not officially - that this transfer may be taking place pursuant to an agreement or agreement-in-principle on which the Ross River Kaska Dena and/or the Kaska Nation have not even been invited to comment, let alone consulted.

2. The land comprises part of the traditional territory of the Kaska Nation, and has historically been used for activities such as harvesting.

3. The extent to which the land is reclaimed, the nature of the reclamation and the length of time that it takes for the reclamation to commence and be borne out will all have significant effects on the ways in which the Kaska Nation people exercise their rights on the land; rights which have never been surrendered, but the exercise of which has been interrupted by the presence of the mine.

4. As the party with the most significant long-term interest in the site, Ross River's views and those of the Kaska Nation must be considered.

5. Ross River and the other members of the Kaska Nation, including the Liard First Nation and the Kaska Dena Council, have a right both to be consulted on, and participate in, the reclamation process and activities that are consistent with it.

This, we believe, in and of itself gives rise to a common law duty of consultation. But there is more.

.../5

DEREK T. GROUND, Barrister & *Solicitor*

THE WATER LICENSE

6. The Water Licence process in fact engages two processes: the process in front of the Board itself, and the broader Canadian Environmental Assessment process. Ross River and the Kaska take the position that they are entitled to a consultative process separate and apart from the process(es) occurring with "stakeholders". To use what we regard as that unfortunate word to illustrate the point, Ross River and the other Kaska are not simply "stakeholders" in the usual sense, in part because the stakes they hold are unique, have been recognized as such throughout these proceedings and are recognized as such at law. For these reasons, Ross River and the Kaska do not consider the public meetings currently taking place to be "consultation" as per the First Nation(s).

RECLAMATION

7. We are told that the current wisdom is that the development of a reclamation/site closure plan could take as long as six years. Although we recognize that the closure of a property such as this is enormously complex, we cannot understand why it will take so long to develop a *plan*. Our advisers are confident that a plan could be developed much more quickly, and the work could begin sooner.

8. Although it is the IR's view (and, one assumes, DIAND's) that the current projects and licence renewals are not part of the closure plan, the recent Reports of the Interim Receiver to the Court have made it clear that these projects are "in harmony with long term closure plans". The long-term closure plan is going to necessitate a consultative process. So too should any proposed projects that are going to have an impact on or influence those plans.

PRINCIPLES FOR CONSULTATION

Some of these principles are taken from a paper by G.J. McDade Q.C. of Vancouver, which I will provide to you upon request.

1. In general aboriginal title carries with it "the right to choose to what purposes the land is put". (*Delgamuukw*)
2. Aboriginal title is not absolute. It can be "infringed" by the Federal or Provincial Crown if the Crown can meet the test for justification. (*Sparrow*)
3. The duty to consult arises from potential or probable aboriginal rights or title – it is enforceable prior to aboriginal rights and title being proven in Court. (*Taku River*)
4. The duty to consult is an immediate and enforceable legal duty. (*"Haida I"*).

.../6

5. Meaningful, genuine consultation must occur early in he planning stages of the project(s). (*Mikisew*).
6. The purpose of consultation is to "substantially address the concerns" of the First Nation and "accommodation" of First Nation interests with governmental economic objectives. (*Haida 2*)
7. Consultation involves an obligation to discuss both cultural and economic interests. (*Haida 1*) Aboriginal title has an "inescapably economic aspect". (*Delgamuukw*) It must involve a discussion of whether the "actual allocation of the resource" has been done with priority or respectful of Aboriginal rights.
8. Aboriginal rights or title generally have priority – resources must be allocated in a manner respectful of prior Aboriginal rights. (*Delgamuukw*)
9. The nature and the scope of consultation will vary with the circumstances of the infringement, and the strength of the aboriginal claim. (*Delgamuukw, Haida 1*)
10. A standard public consultation process is not enough. (*Mikisew*). A regular public notice is not enough. (*Mikisew, Halfway River)* The First Nation is entitled to a distinct process. (*Haida 1*).
11. The Crown's fiduciary duty cannot be delegated to interested third parties. (*Mikisew*)
12. Third parties do have a duty to consult the First Nation(s). In some cases this duty may be fiduciary in nature. (*Haida 2*)
13. Consultation requires that First Nations be provided with all necessary information in a timely way.
14. Participation in consultation usually requires that the First Nation have adequate resources to participate meaningfully.

Other than setting out the bases and general expectations for consultation, as above, it makes little sense to put together a proposal in writing at this stage that may be seen to bind one or both of our clients. In the absence of any responding correspondence from DIAND or from their legal counsel to several letters since June of this year, I can only assume that DIAND, like counsel for the Interim Receiver, is amenable to discussing with my client a mechanism for the formalization for a consultative process on the Faro mine project(s), and my clients and I would welcome the opportunity to meet with DIAND to discuss what such a process would look like.

I would, in particular, appreciate from DIAND an acknowledgement of and response to this current letter and, indeed, to my letters of 5 June 2002 forward.

We expect that all parties will acknowledge that they have a duty to consult with my clients, and then work with us to establish how to do it.

.../7

DEREK T. GROUND, *Barrister & Solicitor*

We look forward to hearing from you, and to pursuing this issue on a co-operative and respectful basis, rather than through the courts.

Yours very truly,

Derek T. Ground

c.: Ross River Dena Council (by e-mail)
Kaska Dena Council (by e-mail)
Liard First Nation (by e-mail)
Ian Church, DIAND Whitehorse (by fax)
Robert Lauer, DIAND Ottawa (by fax)
Edward Sellers/Fred Myers, Osler Hoskin & Harcourt, solicitors for YTG (Toronto) (by fax)
Wes Treleaven, Interim Receiver (Deloitte & Touche) (by fax)
Stephen Walsh, Barrister & Solicitor (by e-mail)
Rod Snow, Davis & Company (Whitehorse) (by e-mail)

SCOPE OF EAR GUIDELINES

Map Search
EHS
1 ARMC Interim Receivership
2 Contact Information
3 EHS, TAC Reports and Data
4 Listing of Final Project & Study Reports
5 eRoom Reference Material
6 Collaboration Area
1. Open Discussion Forum Anvil Range
455-01 Fresh Water Supply Dam (FWSD)
455-02 Environmental Maintenance (ENVMNT)
455-03 Rose Creek Tailings (RCT)
455-04 Renewable Energy (RNNRG)
455-05 Risk Based Management (RBMGT)
455-06 Vangorda Acid Rock Drainage (VARD)
455-07 Vangorda Water Treatment (VWT)
455-09 Water Licence Renewal (H2OLR)
1. RFPs
2. Communications
Baseline Table of Contents
Clarification of baseline scope of work
Comments on EAR
Detailed vegetation sampling design and agency comments
Draft EAR
EAR Guidelines and scope of screening
EAR methodology
Fisheries feedback regarding study methodologies for EAR
GLL Communication Records

EAR Guidelines and scope of screening

a note created by Shannon Glenn on 15 Aug 02

At beginning of CEAA process, LG agreed to send comments from stakeholders as t

Attached are comments from various respondants.

Comments

Meetings held in Wkitehorse re comments, week of August 20 2002 (Shannc
Meeting with DFO

Held August 20 in Whitehorse. Attended by DFO (Sandra Orban), D&T (VC/SG), GL Whitehorse. See Logistics email re setting up the meeting.

Purpose: to discuss the comments from DFO re. project description.

SG provided update on upcoming week activities, including meetings with EC, Wat addition, RERC and Whitehorse and Faro open houses.

SG provided update regarding who we have received comments from to date, incl Environment, Business Tourism and Culture, DIAND Ross River.

DFO does not have a trigger to declare themselves an RA. Nonetheless, they have determine they are not an RA because 1) they want to comply with the spirit of th want to understand the relationship between this project and the FWSD. Valerie r short-term remediation of risk, leaving function of dam essentially intact until suc be integrated in rest of closure planning for the site.

DFO had not yet written comments. These can be expected shortly, including revi

Raquel Roizman will be attending the RERC meeting on behalf of DFO.

Later in the week, Leslie Gomm mentioned that DFO will likely be requiring addit

Meeting with Environment Canada

Held August 20 in Whitehorse. Attended by (Benoit Godin and George MacKenzie-(Fratton) at DFO offices in Whitehorse.

Purpose: to discuss the comments from EC re. project description.

SG provided update on upcoming week activities, including meetings with EC, Wat addition, RERC and Whitehorse and Faro open houses.

SG provided update regarding from whom we have received comments from to da Resources, Environment, Business Tourism and Culture, DIAND Ross River.

Introductions of project teams were made, as well introductory remarks regarding as fast as possible, recognizing the frustrations have occurred over the past twent

A clarification was provided regarding the role of an Interim Receiver, the court o discussions between DIAND and YTG regarding responsibilities after Devolution.

- H20LR-m-030802-Anvil Range_Agenda_April 14 17.doc
- H20LR-m-030802-Anvil Range_Workshop Agenda_FEB 20.doc
- H20LR-013003-m-Licensing strategies going forward.doc
- Linkage with Project Team
- Planning of Open Houses
- Project Description Inputs
- RERC meetings
- Water Board
- Weekly Tuesday conference calls, starting July 30
- 3. Working Papers
- 4. Interim Reports
- 5. Discussion Forum
- 455-10 Faro Water Treatment (FWT)
- 455-11 Mass Loading Balance (MLB)
- 455-12 ESA Concentrate Load-out (ESACL)
- 455-13 Dam Safety Reviews 2002 (DSR'02)
- 455-14 Emergency Response Plan (ERP)
- 455-15 ARD study
- 455-16 - June 2003 Technical Workshop
- 7 D&T Workspace
- 8 Extranet Manager's Admin
- Recycle Bin

A recognition was made about long history of mine and need to move forward qui is divided approximately half and half between planning and permitting, it is the closure planning phase, with renewed look at schedules to ensure that they are a

It was recognized, based on questions received, that Project Description could pr clarified that as much scientific work, particularly on the characterization side, w the ICAP would not go to waste. The ICAP knowledge gaps, internal inconsistencie referenced in the Project Description will be clarified. In addition, more informat of the property.

A commitment was made by the Interim Receiver to respond to the additional req additional information regarding management structure; 2) clarification about ICA

Meeting with CEAA and DIAND Environment Directorate

Held August 20 in Whitehorse. Attended by DIAND Environment Directorate (Ian Cl D&T (VC/SG), GLL (Stephen Morison, Glenda Fratton), DFO (Sandra Orban and Rac

Overall status of the current CEAA process was discussed.

The discussion focused on the need for more clarification on DIAND Water Resourc on the treatment in the EAR and relevance of ongoing negative environmental eff activities. Due to stage of advancement of site characterization, the EAR will hav directly related to proposed activities. It was unclear how the presence of signific the CEAA process and what actions could be taken in the EAR, given the current e requirement of CEAA. Some items where additional information was identified inc

It was also discussed that alternatives to the project can be presented, including Section 39 and starting reclamation now.

Meeting with DIAND Water Resources

Held August 22 in Whitehorse. Attended by DIAND Environment Directorate (Leslie and Bill Slater), D&T (Wes Treleaven, Valerie Chort, Shannon Glenn), GLL (Stephe

The majority of the conversation focused on the role of the Interim Receivership, relation to defining the role of the Interim Receiver, the need for enhanced inter regarding the role of the receivership. It was concluded that both the Interim Rec clarification in that regard.

DIAND Water Resources also clarified that they view as quite different the respon DIAND to prepare a closure plan.

Steve Morison and Bill Slater met after the meeting to discuss specifics of informa

Meeting with Yukon Conservation Society

Held August 22 in Whitehorse. Attended by YCS (Bob Van Dijken), D&T (Wes Trele

Bob explained that Yukon Salmon Committee would have liked to attend but infor Apologies were extended on behalf of the Interim Receiver. Bob committed to pr he had been able to obtain brief comments from Carl Sydney prior to the meeting meeting only in the capacity of YCS.

Themes of discussion were similar to meeting held with Environment Canada, incl around use of the ICAP, acknowledgement of legacy issues at the site, clarificatio current use of federal funding.

Regarding the TAC structure, a comment was made that turnover on these commi include Brett Hartshorn on the committee, as this contamination department of D doing an 'expectation identification' exercise, including various formal and inforn

It would be useful to Bob to get the TAC structure prior to September 4, when he

Question about exemption of project under CEAA Exclusion List Regulation (
The attached letter was sent by D&T to Leslie Gomm enquiring about whether the
possibly exempt under the Exclusion List Regulation of CEAA.

Leslie called late pm of Thursday August 29 to acknowledge the letter. They will l

A review of this letter was done by Heenan Blaikie per the attached email.

Conversation with SRK August 16 and September 4 re. response to EC commen
4 Sep 02 3:30pm)
Two conversations were held with SRK regarding providing a three part response t

The objectives of this response include: 1) additional context around management
critique of ICAP by SRK (information taken from analysis included in their current 's

LG was consulted with respect to formating the response in a letter or mini report fo

Conversation with Joanna Ankersmit (Shannon Glenn, Deloitte & Touche, 10
September 9, SG provided an update to Joanna Ankersmit (other half of conversat

we have been receiving comments (per attached email to JA) from various stakeh

- SG provided an overview of EC and WR comments per letters and noted th
  current screening rather than on commenting on closure
- SG mentioned that, per meetings in Whitehorse, the region would like a in
  is being sent by EC region to HQ that might start that process (linkage at A
- DIAND HQ has designated an EA specialist to provide guidance to the regio
  with Ian Church and LG to discuss the roles of the dpet, scope of the proje

A follow-up call was held between SG and LG

- Exclusion letter enquiry still coming at the end of the week. CEAA proces
- she wants 40 copies of the response to EC. PDF format as well prefered via
- she confirmed that DIAND HQ is talking to the region, including WR, EC an

MMER (Shannon Glenn, Deloitte & Touche, 10 Sep 02 12:43pm)
An attached email (MMER and Faro) explains the upcoming MMER regulation and a

Update call to Leslie Gomm (Shannon Glenn, Deloitte & Touche, 11 Sep 02 5
SG updated LG by phone regarding:

- status of the EC response is that it is still in review process and will be out
- regarding funding for Ross and her meeting there tomorrow: there are con
  she just be as vague as possible.

LG mentioned

- NRCan has submitted some technical comments to her. She will forward t
- the exclusion letter response is being reviewed by Ottawa. It will be read

Conversation with Chris Cuddy (Shannon Glenn, Deloitte & Touche, 11 Sep 0
A conversation took place between Chris Cuddy and Shannon reg

He is supportive of our approach regarding focussing the scop

as well as by seeking advice from our legal counsel. DIAND O broadly.

Ottawa will be talking to the region (any federal ministry re receivership and overall direction on the project.

A later email from Chris indicated that "Sarah Kalff of our o Sarah is very knowledgeable about CEAA. She may be calling

Response to exclusion letter (✉ Shannon Glenn, Deloitte & Touche, 20 Sep 02
A response to the enquiry regarding possible exlcusion under CEAA has been recei

Format of response to EC (✉ Shannon Glenn, Deloitte & Touche, 1 Oct 02 9:18
The email entitled 'Format of response to EC' indicates that the Project Descriptic preliminary indication that the CEAA screening is continuing as planned.

Opinion letters from Heenan Blaikie (✉ Shannon Glenn, Deloitte & Touche, 1 O
Three versions of an opinion letter from Heenan Blaikie are attached. These are the note regarding opinion letters. Also, the September 27 version is included in screening.

Two calls with Leslie Gomm (✉ Shannon Glenn, Deloitte & Touche, 2 Oct 02 3:
SG and LG talked on September 24, prior to the Meeting with Ottawa re. CEAA scr

General note: DIAND employees got YTG job offers: lots of shuffling of seniority.

Update on RR:

- they supposedly did not know about the meeting on September 17 with AR
- we will pay for technical review
- legal and non-technical not yet resolved as at September 24 (but was later 10).
- Laura Spicer wants copies of letter from WT (these were sent, per Ross Riv
- who is in charge is not clear
- the $6,000 has not yet been disbursed by Laura Spicer because they have r

Guidelines:
SG mentioned that we are considering next steps around definition of project witl response regarding exlcusion. It is a toss-up between time required for further di discussions about relevance of submitted information takes place after the fact. internal meeting on Thursday October 27 between EC/DFO/WR for scoping. Still SG to update LG re. results of meeting with Ottawa on September 27.
they have decided it will go to mediation due to uncertainty
DFO Vancouver is getting involved: they have enquired why this is not a Comprehe

November 5 meeting between GLL and Leslie/Bill (✉ Shannon Glenn, Deloitte

Call with Leslie and Ian (✉ Shannon Glenn, Deloitte & Touche, 8 Nov 02 2:20pm
Leslie and Ian called. Draft guidelines cannot be issued without RRDC comments, tell her they are going through legal review. They will not be issued until after L gets them before the 13th.

A sneak preview will be sent to D&T prior to that.

November 5 Meeting between GLL and Leslie/Bill (✉ Glenda Fratton, Gartner L
Present: Bill Slater, Leslie Gomm, Steve Morison, Glenda Fratton
Location: Gartner Lee Limited in Calgary

- Steve and Glenda briefed Bill and Leslie on the draft of the EAR submitted to De
- Consultation on closure studies/planning

▫ TAC - exchange of information and advisory to studies needs to be emphasized
▫ Cumulative Effects Assessment (CEA) - Glenda asked for DIAND's input on projec
***Fresh Water Supply Dam (FWSD) - keep as separate project? - look at CEAA acce
license amendment? DIAND will provide direction in the EA Guidelines on how to i
***Placer Claims - Mr. Hamill (Blind Ck Road)
***Ketsa Mine - likely not interacting effects, but has been traditionally linked wit
***Decommissioning of Faro mine
- it will happen in the reasonable foreseeable future therefore should be consider
- it will help bring about a positive screening to the EAR
- Steve mentioned that we need clear objectives for the decommissioning to do a
- DIAND understands that it is likely their job to come up with objectives of the d
help determine the objectives
- See DTA for objectives as stand now.
- DIAND understands that we will only be able to have a very general discussion or
- DIAND agrees that objectives for decommissioning need to be determined ASAP
▫ Need to provide rationale and assurance in EAR that a Closure Plan will be done
DIAND will address closure in their screening report
▫ Socio-economic - Steve asked if DIAND has information on this
***Bill - for the EAR only the environmental effects that affect the socio-economic
due to environmental effects)
***DIAND won't and can't look at the direct socio-economic effects or benefits to
***If direct effects of the activities on socio-economics are put into the EAR - DIAI
▫ Leslie indicated that draft EA guidelines would be out by November 13th at the
final version of the guidelines will likely be completed in early December. The gui
sludge management plan
▫ Based on these timelines we are looking at having a draft EAR to DIAND by Janu
draft. We would then finalize the EAR. Leslie indicated that another workshop sh
issues, instead of going back and forth - should be more efficient this way
▫ Steve indicated that Intergovernmental environmental management consultatio
appropriate place for this is in the screening report.
▫ Steve will visit with Deloitte & Touche next week and provide Shannon with a b

Scope change of EAR (✉ Shannon Glenn, Deloitte & Touche, 9 Dec 02 12:59pm)
A teleconference between IR and DIAND/YTG indicated that Rescoping of EAR due

Call with Leslie Gomm re. follow-up of AR decision (✉ Shannon Glenn, Deloitte
SG had a call with LG regarding impact of AR planning decision on water licence r

- the CEAA legal challenge question has resurfaced. A legal decision will be issued before then. Maybe early January.
- many of the site characterization information requirement in the draft dra requirements for RRDC
- LG is open to a conversation those initial guidelines. Friday 2pm Toronto t

Update call with Leslie Gomm (✉ Shannon Glenn, Deloitte & Touche, 15 Jan 03
Prior to Christmas, status was left as:

- legal challenge: LG and Bill Slater had spent three days reviewing our ques review was taking place in Ottawa.
- WT heard from Chris Cuddy that the guidelines would not be rushed and w decisions to be made at the site.

SG called LG for an update and left a message wrt getting an update, a pre-TAC n at the TAC.

Meetings in Whitehorse regarding next steps (✉ Shannon Glenn, Deloitte & Tou
Two meetings were held in Whitehorse with DIAND Environment Directorate durin screening.

Attendees:

- D&T: Shannon Glenn
- GLL: Stephen Morison
- DIAND ED: Leslie Gomm and Ian Church (latter only at second meeting)

Outcome:

- Status of CEAA screening: still on per decision reached January 14. WT fo DIAND had decided that a screening was not necessary per arguments laid protesting the decision as water licence seen as vehicle for forcing accoun
- Ross River: regular calls from Doris Dreyer to Leslie Gomm regarding fundi recent GLL steps to hire a RRDC staff as liaison during the EAR.
- Guidelines: the CEAA review will consider the C&M and emergency reclam as a mititgation and should be considered under cumulative effects. RAs a guidelines. Draft guidelines out by 7th February and in final form by Marc
- Intent to have DFO/EC/DIAND meet at the end of February to discuss mitig
- Joint review with Water Board: not possible because WB is not an RA. Dis similar documents by RERC and by WB and scheduling advantages appeare
- Schedule: see attached spreadsheet discussed at meeting. SG to email to appropriateness. See Comments from Water Board secretariat regarding :

See LG follow-up email attached. See SG follow-up email regarding the schedule

Two calls with Leslie (✉ Shannon Glenn, Deloitte & Touche, 29 Jan 03 1:50pm) Received revised draft guidelines from Leslie. This version had not been circulate

Further to the call between WT/SG and DIAND Ottawa, Sarah Kalff had called Les follow-up. Outcomes of the call are:

- reassure LG that guidelines had not been circulated further
- SG explained that the topic of guidelines had come up during a conversati
- LG mentioned that these guidelines aren't final and that the proponent (i.
- some specifics were discussed such as information required for flood hydr conditions
- confirm phone meeting around reviewing the guidelines with her to provid

Conference call regarding Guidelines (✉ Shannon Glenn, Deloitte & Touche, 31 In advance of a meeting between Leslie Gomm and the RAs to review the guidelin discuss availability of data and/or level of effort required to meet deadlines.

In preperation for the call, GLL prepared an analysis of the guidelines, per attach Plan for call is to:

- discuss extension
- discuss scope in general
- go through major sections

GLL/D&T need to plan timelines, budgets. Three things will be happening almost
and renewal application. The renewal application will be done before the draft
completion of the CEAA process.

- extension: presented idea; mentioned plan to come to Whitehorse soon; a
(minimum flow).
- general comment: fairly detailed for care and maintenance and in light of
- traditional knowledge: we want to incorporate as much as possible for C&
of RRDC to participate.
- unhappy of content of PD on traditional knowledge - but not mentioned in
- page 3: electronic and hard copy: 40 copies. 72 x $200.
- 2.2.2 we have gone out and summarized: work in tailings and work in wast
impact on the receiving environment. In order to positive screening: proj
the short term. We don't have the information for that. daylighting x14.
- 2.2.3. detailed engineering "sufficient design structure". If bioremediatior
detail.
- 2.2.3.1. how are different plans harmonized. pit vs exposed oxydization f
it'll become resoluble. effort at keeping water level low in the tailings.
low. tailigns study: we can't say how quick the front is moving. looking at
being done.
- 2.2.3.2 "describe in detail" "a process for future review and approval shoul
component to another. EA vs regulatory: we need to be clear what you a
developed.
- 2.2.3.3. how we are going to about a plan for implementing a groundwate
- 2.2.3.4. justify what these need to be taken out. defer to wb. project tea
and running. is the porject team in agreement with the changes to the lic
- 2.2.6 In-house results. Comment raised by Environment Canada.
- 2.3.1.3. dam safety review
- 2.3.1.5.1. done as part of ICAP. Update regional.
- 2.3.1.6.3. if we don't have it, don't provide it.
- 2.3.1.6.4. total metals, not dissolved.
- 2.3.1.7.2. vegetation metal sampling. plant surveys designed. no characte
plants for metals.
- 2.3.1.7.3. some general wildlife information
- 2.3.2 because new activities was quite laid out in PD. are there going to b

Two conversations with Leslie Gomm (✉ Shannon Glenn, Deloitte & Touche, 5
SG had two conversations with Leslie Gomm on February 4th regarding:

- update about her meeting with the RAs: some verbiage was changed to ref
version of the guidelines to SG (attached). The RAs are pleased with the g
'state of the environment report' in relation to what was included in the IC
- LG has been asked to participate in conference calls with Ottawa regardin
the reason we have been talking to Ottawa is because of upcoming court r
February 7. Ottawa has a copy of the guidlines (not from IR) and LG has n
- LG wanting to understanding Marg Crombie's (YTG) involvement in the guic
- LG has been frustrated by her ability to move forward with this process as
- Conversation resulted in the discovery of potential communication gap at
Robert Lauer, Ian McGregor had apparently reached an agreement with JB
determination of Justice Canada) but would be best to go forward from a
scoped very narrowly. LG has received no guidance, written or verbal, fro
concern about this process in an internal regional meeting.
- A follow-up conversation between WT and Robert Lauer indicated that Ott
communication gap.

February 11 2003 Discussion of guidelines (Shannon Glenn, Deloitte & Touch
On the basis of guidelines draft received from Leslie Gomm on February 10, 2003,

- Leslie Gomm
- Hugh Copeland
- Marg Crombie
- Sarah Kalff
- GLL and SG

Purpose to discuss outstanding points. SG led discussion.
First Nations: subject to willingness to participate
2.1.4: summarize working relationship of Interim Receiver (not D&T) with First Na
level of detail in 2.2.2. "in some cases with specifications approaching a permitti
ARD plan goes into adaptive management
2.2.2.4. "Describe in detail all amendments to the existing water licences includir
highlighted that these divided into two: closure related and change in monitoring
team.
2.2.2.5. Proposed studies: we don't know studies - this should reflect c&m studies
2.2.3. accidents and malfunctions is seperated from adaptive management for pe
2.3.1.6.3. Where info is available.
2.3.1.8. eliminate reference to future land use.
2.3.1.9. SG described intent for borrow sources: nominal expansion of existing a
2.3.2.1. to 2.3.2.3. where info is available.
3.1.1. Scope: add time component
3.1.2. "including the environmental effects of malfunctions or accidents that may
FWSD: cumulative effects.
3.3.4. future land use eliminated.

SG signed off on guidelines. These were issued to RERC two days later. See attac

Conversation with LG re. RRDC reaction to guidelines (Shannon Glenn, Deloi
SG spoke to LG on February 26 and 28 2003 re. LG trip to RRDC on 27th.

SG asked that, in preperation, LG mention that SG planning a trip to visit on the 1
asked that this not be mentioned until contact with Sheila Greer could be made.

On visit, LG and Ian Church met with 9 people, inlcuding council members and on
including Fred Greene.

- At the beginning, they agreed to disagree that the meeting did not consist
- Jason Acklack has been laid off for funding reasons.
- RRDC want more contact with IR, inclduing a TK session.
- they were pleased with the wildlife monitoring requirement in the guidelir
  creek.
- they had questions regarding adaptive management
- they highlighted their concerns about the tailings. LG highlighted that thi
- communication was highlighted in relation to emergencies and disseminati

Over all, LG felt the meeting and discussion had been constructive and positive.

Stakeholder meetings in Whithorse March 10 (Shannon Glenn, Deloitte & To
Left messages for:
YCS/YSC/DFO/EC for meetings. I also left a message for the WaterBoard and disc

I called Ross River to see if I could set up my appointment for the 11th as I did ye

Meeting between Leslie Gomm and RRDC (Shannon Glenn, Deloitte & Touche
Leslie Gomm met with RRDC on February 25th to get comments on the draft guide

Attachments

Comments from Yukon Energy Mines and Resources.pdf

Environment Canada Comments on Project Description.pdf

Misc comments on Project Description.pdf

Water Res Comment

Re misc follow-up to TAC meeting.msg

FW MMER and Faro.msg

Comments from DFO.pdf

Comment: NRCAN.

Review of Exclusion Enquiry by Heenan Blaikie.msg

Opinion Letters

Email from Chris Cuddy re. Tungsten mine and applicability of CEAA Section 74 4.msg

Letter reg CEAA stat DIANI Ottawa.

WLR going forward.mpp

LG thoughts on relicencensing strategy and follow-up Heenan Blaike comment.msg

Draft EAR Guidelines.msg

DAVI SHEREST THOUGHT FARC RELICENCIN

Draft EARguidelines_Feb13_2003_RERC.pdf

Draft EAR guidelines February 11 2003.msg

LG January 28 followup email with WLR milestones.msg

SG Janua followup t Schedule CEA/ completio

Comments on EAR guidelines to Leslie from stakeholders.msg

RRDC Meeting FEb 25_2003.wpd

PRELIMINARY DRAFT
INFORMATION GUIDELINES

for the preparation of an

ENVIRONMENTAL ASSESSMENT REPORT

for

Anvil Range Mining Corporation - Interim Receivership
Water Licence Renewal

Prepared by

Environment Directorate, Yukon Region - Indian and Northern Affairs Canada

November 13, 2002

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PART I - OVERVIEW

1.0 INTRODUCTION

On May 31, 2002, Deloitte and Touche Inc. submitted their Anvil Range Mining Corporation - Interim Receivership Project Description to the Department of Indian and Northern Affairs Canada (DIAND). The Anvil Range project triggered an environmental assessment pursuant to the *Canadian Environmental Assessment Act* (CEAA). The Project is designed to continue care and maintenance, and prepare a final closure plan for 2004-2008 involving the application to amalgamate two existing water licences into one. The project is, as such, required to undergo a Screening under CEAA. Upon receipt of the Project Description Report, DIAND undertook a review as laid out in the Regulations Respecting the Coordination by Federal Authorities of Environmental Assessment Procedures and Requirements as required under CEAA, to determine which federal departments were Responsible Authorities (RAs). DIAND and DFO were identified as RA's. The Project Description Report also underwent a public/ governmental review with comments from this review included in these guidelines, and forwarded to Deloitte and Touche Inc.

The following Environmental Assessment Report Guidelines have been developed by the RA, incorporating, where appropriate, the comments received during the review of the Project Description. Information requests stemming from these comments are presented in *italics* within the appropriate sections of the guidelines. In no way do the italicized information requests represent points that are to be given less or greater attention than the bulleted information requests; the italics only represent the fact that these requests originated from the review of the Project Description. Stakeholders have been given an opportunity to comment on these guidelines and their comments have been considered and incorporated as appropriate.

1.1 PURPOSE OF THE GUIDELINES

These guidelines provide Deloitte and Touche with guidance and direction for the preparation of the proponent's Environmental Assessment Report (EAR) that must be completed to enable the RA group to complete the Screening Report. The scope of the assessment describes the basis for the conduct of the EAR, and focuses the assessment on the relevant issues and concerns (note that the definition of the scope of the project and assessment for the screening is the responsibility of the RAs). This document also provides direction to the proponent on how to structure the EAR.

While the guidelines provide the basis for conducting the environmental assessment and preparing the report, it is the responsibility of the proponent to provide sufficient information and analyses to allow the evaluation of the potential adverse environmental effects of the proposed project. It is up to the proponent to demonstrate that it has identified the issues relevant to the assessment of the project, that it has an understanding of and a respect for the physical, biological and socio-economic environments into which the project will be introduced, and that it understands the ways in which the project will affect these environments. The EAR should also demonstrate that the proponent has

communities must be asked to be actively involved and the use of traditional knowledge must be approved through consultation with the First Nation to determine the appropriateness of its use. Where traditional knowledge is not available to the proponent despite appropriate diligence, the proponent shall describe efforts taken to obtain it.

1.3 PRESENTATION OF THE ENVIRONMENTAL ASSESSMENT REPORT

1.3.1 Conformity

The Proponent is expected to observe the intent of the guidelines and to identify and describe all environmental and socio-economic effects that may arise from the Project including those not explicitly identified in the guidelines. Matters which are relevant to the company should be substantiated through data, design, experiences ore other information that verifies, confirms or supports the assertion advanced. It is possible that these guidelines include matters which, in the judgement of the Proponent, are not relevant or significant to the Project. If such matters are omitted from the EAR, they should be clearly indicated so that the reviewers, public, First Nations, and other interested parties have an opportunity to comment on this judgement. Where the RA(s) disagrees with the Proponent's statements in this regard, it may require the Proponent to provide additional information.

1.3.2 Format and Presentation

The format of the EAR is largely left to the discretion of the proponent although reviewers must be able to clearly identify where specific issues have been addressed and directions followed. If sections overlap in content, then information should be cross-referenced rather than repeated.

The proponent should identify in a list of references all sources of information used in the preparation of the EAR. Supporting documentation should be provided in separate volumes or appendices and should be referred in the main EAR text.

The proponent should present the EAR in a clear and concise manner. Where the use of technical language cannot be avoided, a glossary defining words and acronyms should be included. The EAR shall make optimal use of maps, charts, diagrams and photographs wherever useful to clarify the text. Maps and diagrams should be presented at a common scale, appropriate to represent the levels of details considered, and where possible allow direct overlay for ease of reference.

- *The Ras are aware that the overall management structure for this site is under development with DIAND and YTG in accordance with the DTA and as such this information will be incorporated into the EAR once it has been developed by DIAND.*

2.1.5 EA and Regulatory Regime

- Identify the CEAA trigger(s) and RA(s) involved with the proposed project. Identify any relevant meetings or discussions held with federal authorities including future consultation plans.
- Identify known applicable legislation or regulations and required approvals/permits for the project including non-CEAA triggers (For example YTG administered legislation such as YTG Environment Act and regulations, YTG Wildlife Act and regulations and YTG Health Act).
- Identify any unique plans, policies, special designations or other arrangements that affect land use in the project area such as species at risk.

2.2 OVERALL PROJECT

2.2.1 Definition of the Project

2.2.1.1 Project Background

- Describe the project history, current and projected status including updates on changes to the mine site since the cessation of mining and milling operations for both the Faro and Vangorda sites.

2.2.1.2 Project Location

- Provide location description. Present the size, general site layout and legal land descriptions. Indicate where possible land tenure. Provide appropriate maps and geographical coordinates.
- Provide description and map of mine site and lease boundaries.
- Indicate distance to nearest community by road and/or air.
- Summarize project area in relation to drainage basins and eco-regions.
- Describe the regional geology in relation to the project. Use 1:250 000 or larger scale map.
- Present project area topographic maps at appropriate scale (1:30,000 or 1:50,000).

2.2.1.3 Overall Project Facilities

- Describe existing physical structures/ processes on-site including: size and location of site

- *ARD management plans*
- *sludge disposal plans*
- *The comprehensive plans need to consider their effect on risks associated with physical structures.*

- Detail expected changes to the existing water licences including justification as to why these changes are necessary.
- Outline the overall water management plan for the site. This should include pit water, water in the tailings impoundment, and seep collection and treatment. Provide details on seepage control measures or design features which will be sued to improve effluent water quality.
- Describe all water treatment systems used on site including Faro pit water, Vangorda pit water, and water held and discharged from the tailings impoundment area. Information should be provided on the pit pumping schedules, treatment plant operation, reagent usage, volumetric treatment rates, sludge generation rates (volumes) and sludge quality and stability (chemical and physical).
- Provide sludge management plans for both the Faro and Vangorda treatment systems including location of sludge disposal facilities. These facilities should be sited taking into consideration long term sludge disposal requirements. Provide information on existing sludge management practices.
- Describe all "clean" site water management systems, including diversion, withdrawal, drainage operations, stormwater management, sediment control, impoundments.
- Provide a mine annual water balance cycle including sources and quantities of all process water and estimate of its chemical composition at different locations at the site including seeps, groundwater and discharges to the receiving environment.
- Present a water management plan including activities and programs to address wastes not discussed above. Discuss all effluents released, sludge generated and outline plans for waste control, treatment and management strategies.
- Describe the other associated infrastructure necessary for the project including office, fuel storage and dispensing facilities.
- Describe the energy requirements for the Project and the energy sources and quantities that will be used to meet these requirements. Identify the possible energy sources (i.e. connection to existing grid, diesel, alternatives etc.) that could be used.
- Describe site access roads and airstrips. Map access road and airstrip locations and indicate any stream crossings. Indicate whether access is seasonal or permanent.

2.2.2.2 Proposed new constructions/ activities

- Describe in detail any new undertakings in relation to the care and maintenance of the site including the proposed landfill, bioremediation cell, relocation/remediation of acid generating material and upgrading of diversion channels. Sufficient detail must be provided to allow for the review process. Detailed schedules and designs should be provided for the proposed upgrade work on the site structures (Faro diversion, Vangorda diversion and

2.2.2.5 Proposed Studies

- Provide information regarding studies to be maintained and/or implemented over the course of the project including;
  - goals and objective
  - rationale
  - scheduling and timelines
  - consultation with various parties during the development and implementation of the studies including the relevant government agencies and First Nations.
- Outline the process for filling in the knowledge gaps identified. Describe how input from local technical experts will be incorporated prior to regulatory review and approval.
- Describe how information from previous investigations and studies will be incorporated into any planned studies to avoid duplication.

It is important to be clear on how the risk based approach could be applied to this site. Some *elements of the decommissioning, particularly those related to physical stability issues, will have design criteria with implicit* ***risk criteria such as Probable Maximum Flood and Maximum Credible Earthquake. Methodologies for using Ecological Risk Assessment (ERA) to establish risk-based water quality objectives for mine decommissioning are much less well established and are more likely to be controversial. Furthermore, unlike conventional contaminated sites where the source is well defined, at a minesite the contaminants (for example dissolved metals) are typically constantly being, in effect, created through the oxidation of the sulphide minerals. Predicting the risk requires prediction of the rate of oxidation, the rate of transport and the likely impact to the aquatic receptor. Each of these elements has significant associated uncertainties. These uncertainties must be considered in light of the reality that the Fisheries Act simply prohibits the deposit of deleterious substances into fish-bearing waters. As well, the Faro license currently has a water quality objective for decommissioning based on the CCME criteria for protection of aquatic life. The Regulatory agencies need to confirm whether they are willing to consider alternative approaches for the establishment of water quality objectives for Rose and Vangorda Creeks.***

- *Reference is made to a Level1 and Level 2 risk assessment (p. 59). Although these terms are in fairly common usage in some provincial regulations, the definition does vary somewhat from jurisdiction to jurisdiction and the CCME guidance document does not use this terminology at all. Please provide a reference for the definition of these terms.*
- ***The risk framework presented on page 34 puts communication and consultation as the last step in the process. Given that ERA is an inexact science which relies a lot on professional judgment, we would advise that close consultation with regulators will be required at many points in this process in order to ensure that the result is acceptable.***

programs.

2.3 DESCRIPTION OF THE EXISTING ENVIRONMENT

This section should demonstrate the proponents understanding of and respect for the functioning and health of the physical, biological and socio-economic environments as they exist now, and to the extent possible, as they existed prior to exploration activities. Emphasis should be place on those components that are likely to be affected by the Project and on those identified as issues of concern during Government, First Nations and Public Consultation. The information should be presented in a concise manner with details and background information provided in appendices. Incorporated in this information should be the results of the studies that were undertaken at the site during 2002.

- The "baseline" report submitted as part of the Project Description should be recognized as part of the EAR. The presentation of this information needs to be revised to more accurately reflect site conditions including the following:
  - The data presented does not describe true baseline conditions but rather current conditions ore an average calculated on the basis of changing conditions over the life span of the facility. The terminology used to describe the findings should be revised to more accurately reflect the true nature of the data presented.
  - Some of the data are presented in formats that fail to illustrate obvious conclusions. For example, much of the water quality data for impacted sites is presented as averages, where in some cases the standard deviation is greater than the mean. Mean values provide only very limited useful information at sites where obvious trends are apparent.
  - There is little consistency in the treatment of data. In some cases data sets are truncated to eliminate values that are of questionable validity (i.e. groundwater wells in the area of the Main waste rock dumps). In other cases, obvious erroneous values are left in the data sets, resulting in average values that are not reflective of real conditions (i.e. V2)
- The "baseline" information presented in the Project Description essentially consists of two catagories of information: data on the condition and quality at the actual mine site and data on the conditions in the receiving environment. Both of these need to be describe in this section. It is the impact of the former on the receiving environment that needs to be assessed in this EAR.
- The data presented in the Enviromental Assessment Report should be presented in a manner that presents a conservative evaluation of the site and background conditions.
- Outline the methodology and standards used for the collection of information to satisfy any data gaps identified in the Project Description.

long term remediation of the mining site.

2.3.1.3 Terrain Hazards

- Identify natural features and hazards found within the project area, including slides, avalanche zones, flood hazards. Provide information on area seismology and earthquake potential (maximum credible earthquake, maximum ground accelerations associated with a 1 in 475 and 1 in 1000 year return earthquakes).

2.3.1.4 Climate

- Provide a description of general climatic conditions in the Project area for at least one annual cycle in the drainage. Report monthly extremes, and means for temperature, precipitation and snow depth. Provide wind velocity and direction information, aspect of solar radiation and evaporation rates.
- Outline regional analysis used to generate meteorological parameters for design purposes.

2.3.1.5 Water Resources

2.3.1.5.1 Hydrology

- Provide a detailed hydrological characterization of the project area, including peak and minimum runoff for a specified return period.
- Determine runoff hydrology for the affected catchment basin(s) using measured data acquired from designated metering sites.
- Outline regional analysis used to generate hydrological parameters for design purposes.

2.3.1.5.2 Water Quality

- Provide baseline water quality data including water column, sediment, riparian ecosystem, water supply, and receiving environment information.
- Include any assessment of groundwater quality.
- ***At some point a water quality model will be required for both of these sites which demonstrates that the proposed mitigation meets the water quality objective established for Rose and Vangorda Creeks. The information to support this has improved significantly in many areas but we are concerned that the mine has not been measuring flows for several of the key contaminant loads such as X23 on an on-going basis. It is important that the model not rely exclusively on the use of average concentrations but also consider peak loads and minimum flows. In many cases, these scenarios are the most significant factors for regulators to assess whether mitigation proposals are acceptable.***

2.3.1.5.3 Hydrogeology

- Provide results of sampling and collected baseline data, describing sampling sites, and determining taxonomy, biomass, chlorophyll concentration.

2.3.1.6.4 Stream Sediments

- Provide information describing the geological and chemical characteristics of stream bed sediments (grainsize and dissolved metals analysis) in the project area

2.3.1.7 Terrestrial Resources

2.3.1.7.1 Soils

- Include terrain mapping details, soil classification, and erosion potential. Descriptions should also include consideration of attributes that influence or facilitate runoff, such as infiltration and rates of percolation, slope, aspect, vegetation, presence of and extent of permafrost and thickness of the active layer.

2.3.1.7.2 Vegetation

- Provide information on study methodology, results of vegetation cover and biogeoclimatic classification, include any identified rare and/or endangered species and ecological reserves. Description level should be of such quality that an assessment can be conducted as to whether key habitat for important wildlife species is present in the project area.
- Provide information on forest cover and land capability, including stand types and characteristics, and approximate volume/density estimates.
- Plant communities existing on sites that may be disturbed as a result of project activities should be documented to the species level and note made of the site and community characteristics so that efficient and suitable selection of species for reclamation may be achieved.

2.3.1.7.3 Wildlife

- Describe major wildlife species abundance and distribution within the project area including mammalian fauna, amphibians, and reptiles (which may include rare and/or endangered species).

- *A routine heritage resource impact assessment should be carried out focussing on developments that involve new ground disturbance in association with the following:*
  - *relocation of Faro and Vangorda Crekk diversions,*
  - *development of new landfill site*
  - *development of new borrow sources.*

2.3.4 Valued Ecosystem and Cultural Components (VECC's)

- **Present the selected list of expected VECCs for the project and the methodology and rationale used for selection. Justify VECC boundaries.**
- **The proponent should describe how Traditional Knowledge was used in the determination of VECCs.**

2.3.5 Relationships between Environmental, Socio-Economic and Cultural Components

- Identify the key environmental relationships that may be affected by the project. Effort should focus on those environmental components identified as being most important according to the issues and concerns raised by stakeholders.

2.3.6 Sensitivity to Disturbance

- Describe the sensitivity of each environmental component to the projects activities that may affect it.
- Document the methods used to define sensitivity.

- the zones of socio-economic impact including local and territorial.

3.2 FIRST NATIONS AND PUBLIC CONSULTATION

- Provide a distribution list of the parties who have received the Project Description.
- Describe the consultation methods used to identify, inform and solicit input from potentially interested parties. Identify who provided input and their key concerns. Outline similarities or differences in perceived viewpoints.
- Describe how First Nations were consulted and how their specific concerns, issues and comments were identified and incorporated into the EA.
- Describe how First Nation's traditional ecological knowledge was sought, and integrated into the EA including scoping of valued ecosystem and cultural components, description of the existing environmental conditions, predictions of environmental effects, development of mitigation measures, evaluation of significance, and monitoring and follow-up.
- Describe and discuss how public comments or concerns relating to the project and environmental effects were identified and integrated into the EA.

3.3 PREDICTED ENVIRONMENTAL EFFECTS OF THE PROPOSED PROJECT

The environmental assessment report will provide a comprehensive analysis of the potential short and long-term effects of the project on the physical, biological, social, economic and cultural components as identified in Section 2.3 and how the environment may affect the project. This section of the report should also address issues identified in the consultations to date, including the review of the Project Description.

3.3.1 Methods Used to Predict Effects

- Describe the methods used to predict the potential effects of project activities on environmental components.
- For quantitative modelling and predictions, a discussion of the model assumptions, data quality, and the confidence levels should be included.
- Identify any consultations and how traditional knowledge was used in determining and predicting environmental effects.

- Discuss any effects the project could have on the capacity of renewable resources to meet present and future needs.
- Include direct and indirect effects of the project on resource capacity.
- Identify the methods used to determine capacity.

3.3.7 Effects of the Environment on the Project

- Identify the predicted effects of the environment on the project including those identified in Section 2.3 and those associated with extreme climate events.
- Identify the predicted effects on the project of climate change such as effects of changes in permafrost regimes on the stability of containment structures.

3.3.8 Effects of Possible Malfunctions or Accidents

- Identify and describe the possible malfunctions or accidents associated with project activities.
- Identify the proposed safeguards that will be established to protect against possible malfunctions and accidents.
- Identify the contingency/emergency responses procedures that will be in place if a malfunction or accident does occur.

3.4 MITIGATION MEASURES AND RESIDUAL EFFECTS

This section identifies measures to mitigate the adverse environmental effects of the project. Mitigation includes the elimination, reduction or control of adverse environmental effects, including restitution for environmental damage, such as replacement, restoration, compensation, or other appropriate means.

Identification of adverse environmental effects from project components or undertakings is conducted as early as possible in the assessment process. Proponents then identify mitigation measures to eliminate or reduce the adverse environmental effects. The residual effects are then assessed for their significance.

Mitigation measures are part of the project design, defined early in the planning stages of a project, and may be refined throughout the assessment process as adverse environmental effects are clarified or in response to comments from Specialist advisors and Responsible Authorities. Mitigation measures are often part of the industry's code of good practice, standards or environmental policies, and can include plans for such areas as water management, waste

should be provided to enable reviewers and the public to understand how significance of effects was evaluated. The significance of predicted effects should be evaluated according to the following:

- Magnitude;
- Geographic extent;
- Timing, duration and frequency;
- Degree to which effects are reversible;
- Ecological and social/cultural context; and
- Probability of occurrence and confidence levels (risk assessment).

- Describe the set of standards used in the assessment.
- Indicate the level of confidence associated with each assessment.

A CEAA Reference Guide entitled "Determining Whether a Project is Likely to Cause Significant Environmental Effects" outlines a process for determining whether environmental effects are *adverse, significant, and likely*. This document can be downloaded from the CEAA web site. The Guide's three step process includes:

7. Deciding whether the environmental effects are adverse
8. Deciding whether the adverse environmental effects are significant
9. Deciding whether the Significant Adverse Environmental Effects are likely.

3.6 CUMULATIVE EFFECTS ANALYSIS

A cumulative effects assessment for the project is a requirement under CEAA. Cumulative effects are the effects that are likely to result from the project in combination with other projects or activities that have been or will be carried out. The cumulative effects must result at least in part from the project being proposed, and only those environmental effects of the project which interact or accumulate with effects from other projects or activities are to be included as potential cumulative effects.

In the case of future projects or activities, there must be reasonable certainty of occurrence. Therefore, for this project the cumulative effects assessment should include all certain and all reasonably foreseeable projects. Reasonably foreseeable projects will include those that have entered the assessment process under CEAA, those where a right has been issued with respect to use of land or water resources, and those where binding commitments have been made by governments. The following projects/activities should be included in the cumulative effects assessment for the proposed project:

- Decommissioning of the Anvil Range Mine Complex,
- Ketza River Mine, and
- Hunting and trapping in the area.

- Provide references used in the EAR and any supporting data, reports, or other information used to document project information and support assessment conclusions.

PRELIMINARY DRAFT

INFORMATION GUIDELINES

for the preparation of an

ENVIRONMENTAL ASSESSMENT REPORT

for

Anvil Range Mining Corporation - Interim Receivership
Water Licence Renewal

NOT FOR DISTRIBUTION

Prepared by

Environment Directorate, Yukon Region - Indian and Northern Affairs Canada

February 3, 2003

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PART I - OVERVIEW

1.0 INTRODUCTION

On May 31, 2002, Deloitte and Touche Inc. submitted their Anvil Range Mining Corporation - Interim Receivership Project Description to the Department of Indian and Northern Affairs Canada (DIAND). The Anvil Range project triggered an environmental assessment pursuant to the *Canadian Environmental Assessment Act* (CEAA). The Project is designed to continue care and maintenance for 2004-2008 involving the application to amalgamate two existing water licences into one. The project is, as such, required to undergo a Screening under CEAA. Upon receipt of the Project Description Report, DIAND undertook a review as laid out in the Regulations Respecting the Coordination by Federal Authorities of Environmental Assessment Procedures and Requirements as required under CEAA, to determine which federal departments were Responsible Authorities (RAs). DIAND and DFO were identified as RA's. The Project Description Report also underwent a public/ governmental review with comments from this review included in these guidelines, and forwarded to Deloitte and Touche Inc.

The following Environmental Assessment Report Guidelines have been developed by the RA's, incorporating, where appropriate, the comments received during the review of the Project Description. Information requests stemming from these comments have been incorporated into the appropriate sections of the guidelines. Stakeholders have been given an opportunity to comment on these guidelines and their comments have been considered and incorporated as appropriate.

1.1 PURPOSE OF THE GUIDELINES

These guidelines provide Deloitte and Touche with guidance and direction for the preparation of the proponent's Environmental Assessment Report (EAR) that must be completed to enable the RA group to complete the Screening Report. The scope of the assessment describes the basis for the conduct of the EAR, and focuses the assessment on the relevant issues and concerns (note that the definition of the scope of the project and assessment for the screening is the responsibility of the RAs). This document also provides direction to the proponent on how to structure the EAR.

While the guidelines provide the basis for conducting the environmental assessment and preparing the report, it is the responsibility of the proponent to provide sufficient information and analyses to allow the evaluation of the potential adverse environmental effects of the proposed project. It is up to the proponent to demonstrate that it has identified the issues relevant to the assessment of the project, that it has an understanding of and a respect for the physical, biological and socio-economic environments into which the project will be introduced, and that it understands the ways in which the project will affect these environments. The EAR should also demonstrate that the proponent has assessed the significance of the effects likely to be caused by the project, has identified measures to mitigate adverse effects and has identified a program to monitor effects and to refine mitigation over the life of the project.

Following the issuance of these guidelines, the proponent will prepare and submit to the RA group, an Environmental Assessment Report that addresses the requirements of the guidelines. The findings of the environmental assessment report and subsequent consultations will assist in the preparation of the Screening Report required by the RAs in order to fulfill their obligations under CEAA.

1.2 TRADITIONAL KNOWLEDGE

Deloitte and Touche Inc. shall make all reasonable efforts to collect and facilitate the collection of traditional knowledge for integration into the Environmental Assessment Report in collaboration with First Nations communities and organizations. First Nations peoples living on the land and harvesting its resources have developed, over thousands of years and through observation, oral history and instruction from their elders, an in-depth understanding and knowledge base of their local and regional land base. This knowledge includes an understanding of the functioning of ecosystems (resources abundance, distribution and cycles); land and resources management; social, economic and cultural conditions, and the relationships between these factors.

Traditional knowledge is accepted worldwide as a valuable source of knowledge. It can assist in such areas as locating potential archaeological sites, determining habitat requirements for specific species of wildlife, identifying sites of spiritual significance, and providing information on fish and wildlife populations.

Traditional knowledge is, therefore, also a valuable source of information for project assessment, as it can be used in combination with scientific information to confirm evidence or provide more detailed information than is otherwise available. The proponent is therefore required to consider traditional knowledge in various stages of the project assessment, including: scoping of valued ecosystem and cultural components (VECCs); the description of existing environmental conditions; predictions of environmental effects; development of mitigation measures; evaluation of significance; and monitoring and follow-up as required.

In recognition of intellectual property rights of traditional knowledge holders, the environmental assessment report may not include all of the original traditional knowledge that has been collected. However, information must be sufficient to allow reviewers to derive conclusions about the rationale for decisions made in the report that are based upon traditional knowledge that has been collected.

The collection of traditional knowledge can be undertaken through community interactions (e.g. open house meetings) and/or research studies. When conducting a research study, First Nation communities must be asked to be actively involved and the use of traditional knowledge must be approved through consultation with the First Nation to determine the appropriateness of its use. Where traditional knowledge is not available to the proponent despite appropriate diligence, the proponent shall describe efforts taken to obtain it.

1.3 PRESENTATION OF THE ENVIRONMENTAL ASSESSMENT REPORT

1.3.1 Conformity

The Proponent is expected to observe the intent of the guidelines and to identify and describe all environmental and socio-economic effects that may arise from the Project including those not explicitly identified in the guidelines. Matters which are relevant to the company should be substantiated through data, design, experiences or other information that verifies, confirms or supports the assertion advanced. It is possible that these guidelines include matters which, in the judgement of the Proponent, are not relevant or significant to the Project. If such matters are omitted from the EAR, they should be clearly indicated so that the reviewers, public, First Nations, and other interested parties have an opportunity to comment on this judgement. Where the RA(s) disagrees with the Proponent's statements in this regard, the RA's may require the Proponent to provide additional information.

1.3.2 Format and Presentation

The format of the EAR is largely left to the discretion of the proponent although reviewers must be able to clearly identify where specific issues have been addressed and directions followed. If sections overlap in content, then information should be cross-referenced rather than repeated.

The proponent should identify in a list of references all sources of information used in the preparation of the EAR. Supporting documentation should be provided in separate volumes or appendices and should be referred in the main EAR text.

The proponent should present the EAR in a clear and concise manner. Where the use of technical language cannot be avoided, a glossary defining words and acronyms should be included. The EAR shall make optimal use of maps, charts, diagrams and photographs wherever useful to clarify the text. Maps and diagrams should be presented at a common scale, appropriate to represent the levels of details considered, and where possible allow direct overlay for ease of reference.

Electronic as well as hard copies (in sufficient numbers) of the EAR must be provided to DIAND Environment Directorate.

PART II ENVIRONMENTAL ASSESSMENT REPORT GUIDELINES

2.0 EXECUTIVE SUMMARY

- Provide a concise non-technical description of key aspects of the proponent, project, and environmental setting.
- Outline key environmental effects and proposed mitigation strategies and measures.
- Submit a summary of project information submitted and consultation efforts with stakeholders and First Nations.
- Describe any uncertainties and public concerns.

2.1 PROJECT SUMMARY

2.1.1 Project Overview

- Provide a brief introduction to the project, the location and the proponent(s).
- Briefly describe the project components, associated activities, scheduling details and costs.
- Review any important context for the assessment.

2.1.2 Project Purpose and Need

- Describe the specific project objectives.
- Indicate the rationale for the project (e.g. environmental effects management).

2.1.3 Timing Considerations

- Describe how timing considerations affect need for the project.

2.1.4 Project Proponent

The RAs are aware that the overall management structure for this site is under development with DIAND and YTG in accordance with the DTA and as such this information will be incorporated into the EAR once it has been developed by DIAND/YTG.

- Introduce the proponent and the corporate and project management structure. Outline the present management under the Interim Receiver and its relationship with DIAND/YTG.
- Provide important contact information for key personnel involved.
- Indicate any project rights and interests.
- Outline the corporate environmental policy.

- Briefly summarize working relationship with First Nations.

2.1.5 EA and Regulatory Regime

- Identify the CEAA trigger(s) and RA(s) involved with the proposed project. Identify any relevant meetings or discussions held with federal authorities including future consultation plans.
- Identify known applicable legislation or regulations and required approvals/permits for the project including non-CEAA triggers (For example YTG administered legislation such as YTG Environment Act and regulations, YTG Wildlife Act and regulations and YTG Health Act).
- Outline existing permits, licences etc.
- Identify any unique plans, policies, special designations or other arrangements that affect land use in the project area such as species at risk.

2.2 PROJECT DESCRIPTION

2.2.1 Definition of the Project

2.2.1.1 Project Background

- Describe the project history, current and projected status including updates on changes to the mine site since the cessation of mining and milling operations for both the Faro and Vangorda sites.

2.2.1.2 Project Location

- Provide location description. Present the size, general site layout and legal land descriptions. Indicate where possible land tenure. Provide appropriate maps and geographical coordinates.
- Provide description and map of mine site and lease boundaries.
- Indicate distance to nearest community by road and/or air.
- Summarize project area in relation to drainage basins and eco-regions.
- Describe the regional geology in relation to the project. Use 1:250 000 or larger scale map.
- Present project area topographic maps at appropriate scale (1:30,000 or 1:50,000).

2.2.1.3 Overall Project Facilities

- Provide an overview of the physical structures/ processes on-site including: size and location of site facilities including water treatment facilities (i.e. mill, processing plant), waste rock, tailings storage facilities, water management structures, access, reservoirs, dams, ditches, impoundments, water diversions, pumphouses, waste and garbage disposal areas, mine and

office facilities, fuel storage facilities, storage and related infrastructure, powerhouse or transmission lines and other infrastructure. Identify the locations on suitable scale general arrangement map or drawing.

- Included in this should be a history of the development and operation of the various mine components.

2.2.2 Description of Existing Mine Site Facilities

The proponent shall provide a detailed description of the existing mine site features at the Faro mine site and Vangorda Plateau including: open pits, waste rock dumps, tailings impoundments, dams and diversions, buildings and infrastructure and water treatment facilities. The description of various components should include maps and drawings as necessary with the project footprint included in a general arrangement drawing. These drawings should be clearly labelled. The description should include development and operation history of each of the mine site components.

The types and volumes of waste/effluent that are generated at each component must be described. This should include a prediction of the chemical, physical and toxicological characteristics of any effluent (discharge or seepage) originating from each component. This includes surface water, ground water and pit water in the Faro, Vangorda and Grum pits. Waste rock, tailings, and pit wall geochemical testwork and characterization in support of acid rock drainage and metal leaching properties should be described and presented. This information will be used to determine the impact of the various structures on the receiving environment.

The description of physical structures should include where applicable information on stability.

Measures or technologies used to treat waste or effluents should be described and process plans and flow sheets presented.

Where applicable the results of the 2002 site investigations should be included in this section.

Describe the other associated infrastructure necessary for the project including office, fuel storage and dispensing facilities.

Describe the energy requirements for the Project and the energy sources and quantities that will be used to meet these requirements. Identify the possible energy sources (i.e. connection to existing grid, diesel, alternatives etc.) that could be used.

2.2.3 Description of Proposed Project Activities

It should be recognized that the level of detail required for the various project components and activities will vary, in some cases with specifications approaching a permitting level of detail. Sufficient design and/or modelling detail must be submitted, along with supporting data, to allow for

a detailed technical review of the proposed project to confirm that it is practical, feasible and will perform as expected.

The proponent shall provide a detailed description of the proposed project activities as outlined in the following section. This section should present information of the key technologies and processes associated with the proposed project. The description of new components should include maps and drawings as necessary . These drawings should be clearly labelled. Applicable design criteria, standards or parameters must be outlined along with the results of any investigations to establish site parameters.

2.2.3.1 Care and Maintenance Plan

- Provide a comprehensive plan for site management that includes the care and maintenance plans for each major component of the mine site and associated infrastructure and activities. This plan should provide guidance to Deloitte and Touche and regulatory agencies about management objectives and actions required to meet them. As well, it will outline the criteria that will be used for making care and maintenance decisions including monitoring, triggers and contingency implementation . Presently the management of the site appears to be component by component, which fails to address the interdependent and conflicting nature of some of the objectives. This plan should address the management of the site during the five year licence renewal and should include internal decision making and regulatory approval processes. The comprehensive plans need to consider their effect on risks associated with physical structures. Where applicable, contingency actions will need to be identified along with the triggers that lead to their implementation. Some of the critical areas that need to be addressed in the plan are;
  - water management plans,
  - ARD management plans, and
  - sludge disposal plans.
- Describe the "mine" water management plans for the site. This should include pit water, water in the tailings impoundment, and seep collection and treatment. Provide details on seepage control measures or design features which will be used to improve effluent water quality.
- Describe all water treatment systems used on site including Faro pit water, Vangorda pit water, Grum pit water and water held and discharged from the tailings impoundment area. Information should be provided on the pit pumping schedules, treatment plant operation, reagent usage, volumetric treatment rates, sludge generation rates (volumes) and sludge quality and stability (chemical and physical).
- Provide sludge management plans for both the Faro and Vangorda treatment systems including location of sludge disposal facilities. These facilities should be sited taking into consideration long term sludge disposal requirements. Provide information on existing sludge management practices.
- Describe the water management plans for "clean" on site, including diversion, withdrawal,

drainage operations, stormwater management, sediment control, impoundments. The plans for these systems must consider erosion and sediment control issues on site.

- Describe activities and programs to address wastes not discussed above.
- Describe activities related to the use, transportation, storage and handling of supplies.

2.2.3.2 Proposed new construction/ activities

- Describe in detail any new undertakings in relation to the care and maintenance of the site including the proposed landfill, bioremediation cell, relocation/remediation of acid generating material and upgrading of diversion channels. Sufficient detail must be provided to allow for the review process. Detailed schedules and designs should be provided for the proposed upgrade work on the site structures (Faro diversion, Vangorda diversion and seepage collection systems). These activities and others as described in the Project Description will require further approval once detailed information is available. Outline the design standards that will be used. For purposes of the EAR, these components of the project must be describe in as much detail as is available. Where inadequate detail is provided, a process for future review and approval of the proposed project for technical adequacy and feasibility, should be described.
- Outline the short term and long term objectives of the proposed work on the diversion systems. Describe which components can be considered care and maintenance related options versus longer term options such as might be undertaken for closure.
- Describe the contingency plans to enable the Receiver to react quickly to avert danger in case of failure of the diversions and/or pit walls at the Faro and Vangorda Pits such as the Vangorda flume and the north pit wall.
- Describe the size and location of the new facilities. Show the location of the new facilities on the appropriate maps.
- Describe how the landfill will be sited, designed, constructed and operated in accordance with Yukon's Solid Waste Regulations.
- Provide details on the proposed removal/demolition of buildings on site. Outline the process that will be used to prioritize the removal of buildings.
- Describe in details the proposed bio-remediation cell. Outline the mechanism for treatment that will be utilized in the bio-remediation cell including source of bacteria, nutrient addition, operation and monitoring, and closure.
- Outline the process that will be utilized to provide for input from regulators and technical reviewers in the development of stabilization strategies for the remediation of the highly reactive materials on site.

2.2.3.3 Emergency Reclamation Activities

- Describe in details the overall plan for undertaking emergency reclamation activities. Included in the plans should be:
    - decision making framework for implementation of the plans including consultation with regulatory agencies, other governments and stakeholders.

- a monitoring program to assess the status of the individual activity or mine site component,
- triggers/criteria for action based on the above mentioned monitoring program, and
- outline of what actions will be taken.

➢ Describe in detail, based on the above, an emergency reclamation implementation plan for ground water contamination from both the tailings area and waste rock storage areas.

2.2.3.4 Proposed Water Licence Amendments

➢ Describe in detail all planned amendments to the existing water licences including justification as to why these changes are required. This includes the relocation of sampling sites such as V4 and V27.

2.2.3.5 Proposed Studies

➢ Provide information regarding studies to be maintained and/or implemented over the course of the project including;
- goals and objectives,
- rationale,
- scheduling and timelines, and
- consultation with various parties during the development and implementation of the studies including the relevant government agencies and First Nations.

➢ Outline the process for filling in the knowledge gaps identified. Describe how input from technical experts, government and First Nations will be incorporated prior to study implementation.

➢ Describe how information from previous investigations and studies will be incorporated into any planned studies to avoid duplication.

2.2.4 Accidents and Malfunctions

➢ Describe emergency plans including:
- fuel and other hazardous material spills;
- spill and/or accidents on the access route within the Yukon;
- water inputs which exceed retention capacity;
- accidents or malfunctions of key project components such as but not limited to tailings containment area, flumes and diversions;
- general emergency situations such as fire and natural disasters;
- outline contingency plans in the event of failure/breach of the tailings impoundment.

2.2.5 Project Schedule

- Provide an expected and realistic timetable of the project. Discuss any seasonal time constraints.

2.2.6 Environmental Monitoring and Protection Plans

- Describe environmental monitoring plans that will be put in place during the care and maintenance of the site to monitor various environmental attributes that may be affected by the operation. This should include water resources, aquatic resources, wildlife monitoring, as well as monitoring programs for physical structures.
- Outline the process that will be used for submission of the results of testing, studies and investigation.

2.3 DESCRIPTION OF THE EXISTING ENVIRONMENT

This section should demonstrate the proponents understanding of and respect for the functioning and health of the physical, biological and socio-economic environments as they exist now, and to the extent possible, as they existed prior to exploration activities. Emphasis should be place on those components that are likely to be affected by the Project and on those identified as issues of concern during Government, First Nations and Public Consultation. The information should be presented in a concise manner with details and background information provided in appendices. Incorporated in this information should be the results of the studies that were undertaken at the site during 2002. The following considerations should be incorporated into this section of the EAR.

- The "baseline" report submitted as part of the Project Description should be recognized as part of the EAR. The presentation of this information needs to be revised to more accurately reflect site conditions including the following:
  - The data presented does not describe true baseline conditions but rather current conditions or an average calculated on the basis of changing conditions over the life span of the facility. The terminology used to describe the findings should be revised to more accurately reflect the true nature of the data presented.
  - Some of the data are presented in formats that fail to illustrate obvious conclusions. For example, much of the water quality data for impacted sites is presented as averages, where in some cases the standard deviation is greater than the mean. Mean values provide only very limited useful information at sites where obvious trends are apparent.
  - There is little consistency in the treatment of data. In some cases data sets are truncated to eliminate values that are of questionable validity (i.e. groundwater wells in the area of the Main waste rock dumps). In other cases, obvious erroneous values are left in the data sets, resulting in average values that are not reflective of real conditions (i.e. V2)
- The "baseline" information presented in the Project Description essentially consisted of

two categories of information: data on the condition and quality at the actual mine site and data on the conditions in the receiving environment. It is the latter that needs to be described in this section. It is the impact of the former on the receiving environment that needs to be assessed in this EAR. The conditions and quality at the actual mine site is to be described in Section 2.2.2 - Description of Existing Mine Site Facilities.

- The data presented in the Environmental Assessment Report should be presented in a manner that presents a conservative evaluation of the site and background conditions.
- Outline the methodology and standards used for the collection of information to satisfy any data gaps identified in the Project Description.

2.3.1 Biophysical Conditions

The following sections provide a listing of the specific biophysical components that should be addressed in the EAR. This section should be based on the compilation and analysis of existing available data and information.

2.3.1.1 Physiography

- Describe the regional setting for the area including such key terrain features as mountains, rivers and lakes. Identify existing infrastructure or communities.

2.3.1.2 Surficial Geology/Geochemistry

- Provide any surficial soils mapping and identify soil types and areas of concern, including permafrost and erosion potential.
- Provide details on the baseline geochemistry in the area.

2.3.1.3 Terrain Hazards

- Identify natural features and hazards found within the project area, including slides, avalanche zones, flood hazards. Provide information on area seismology and earthquake potential for various return periods including maximum credible earthquake (MCE).

2.3.1.4 Climate

- Provide a description of general climatic conditions in the project area.

2.3.1.5 Water Resources

2.3.1.5.1 Hydrology

- Provide a detailed hydrological characterization of the project area, including peak and minimum runoff and flows for various return periods including PMF.

- Determine runoff hydrology for the affected catchment basin(s) using measured data acquired from site and regional metering stations.
- Outline regional analysis methodology used.

2.3.1.5.2 Water Quality

- Provide baseline water quality data including water column, sediment, riparian ecosystem, water supply, and receiving environment information.
- Include any assessment of groundwater quality.

2.3.1.5.3 Hydrogeology

- Provide a description of the geological elements and processes that affect the hydrogeology of the project area watersheds.
- Provide supporting data to characterize.
- Characterize the groundwater regime of the area, depth to groundwater and regional groundwater flow patterns.

2.3.1.6 Aquatic Resources

2.3.1.6.1 Fish Resources

- Provide results of fish resource studies that have been conducted in the area including fish presence, tissue metal levels, and habitat.
- Include information and baseline data on study methods, riparian habitat surveys, fish sampling, and results of other fieldwork within affected drainages.
- Analysis of the fish capture data should be undertaken to delineate species abundance and spatial and temporal distribution.
- Document critical and sensitive habitats, spawning periods and locations, rare and/or endangered species and habitats.
- Provide a map of fisheries resources.

2.3.1.6.2 Benthic Invertebrates

- Provide results of sampling with summary of inventory including species abundance and spatial distribution.

2.3.1.6.3 Stream Sediments

- Provide information describing the geological and chemical characteristics of stream bed sediments (grainsize and total metals analysis) in the project area

2.3.1.7 Terrestrial Resources

2.3.1.7.1 Soils

- Include, where information available, terrain mapping details, soil classification, and erosion potential. Descriptions should also include consideration of attributes that influence or facilitate runoff, such as infiltration and rates of percolation, slope, aspect, vegetation, presence of and extent of permafrost and thickness of the active layer.

2.3.1.7.2 Vegetation

- Provide information on any vegetation studies carried out in the project area. Outline the study methodology, results and include any information on identified rare and/or endangered species and ecological reserves.
- Plant communities existing should be documented to the species level and note made of the site and community characteristics so that efficient and suitable selection of species for reclamation may be achieved.

2.3.1.7.3 Wildlife

- Describe, based on available information, major wildlife species abundance and distribution within the project area including mammalian fauna, and amphibians (which may include rare and/or endangered species).
- Identify and describe critical/key and sensitive habitats and periods of habitat use in the project area.
- Identify those species that reflect a general level of public and government awareness and concern (Valued Ecosystem and Cultural Components or VECCs) on the basis of perceived intrinsic value, economic importance, traditional use, recreational value, rarity, and sensitivity.
- Identify any additional or ongoing studies or monitoring programs.

2.3.2 Socio-economic and Cultural Conditions

Provide the following information on aspects that may be affected by the environmental changes resulting from the project. Indicate and identify the information on maps, where possible.

- land tenure and designation (leases, ownership, mining claims, settlement land, Parks, land use plans, special management zones, etc.)
- physical infrastructure (roads, trails, powerlines, communication lines,

habitations, cabins, camps, campgrounds, facilities or other structures)

- current and future land and resource uses - both commercial and recreational, non-aboriginal use:
  - recreational activities (fishing, hunting, gathering, hiking etc.)
  - trapping concessions - identify all registered trapping concession holders affected by the project. Discuss the frequency, intensity, and location of trapping activities in the area.
  - forestry - Identify all forest management and/or timber harvesting activities in the area such as cut blocks or access roads, permitted or otherwise.
  - agriculture
  - fisheries - Provide information of cultural, subsistence and commercial fishing activities
  - commercial wilderness activities (including guided fishing, outfitting, hunting and others as applicable)
  - mineral and oil and gas activity

2.3.3 Heritage Resources

- Describe major heritage resources within the project area including traditional land use and archeological sites.
- A routine heritage resource impact assessment should be carried out focussing on developments that involve new ground disturbance in association with the following:
  - relocation of Faro and Vangorda Creek diversions,
  - development of new landfill site
  - development of new borrow sources.
- Describe measures taken to ensure that heritage resources will be protected from disturbances resulting from any new project activities.

2.3.4 Valued Ecosystem and Cultural Components (VECC's)

- **Present the selected list of expected VECCs for the project and the methodology and rationale used for selection. Justify VECC boundaries.**
- **The proponent should describe how Traditional Knowledge was used in the determination of VECCs.**

2.3.5 Relationships between Environmental, Socio-Economic and Cultural Components

- Identify the key environmental relationships that may be affected by the project. Effort should focus on those environmental components identified as being most important according to the issues and concerns raised by stakeholders.

2.3.6 Sensitivity to Disturbance

- Describe the sensitivity of each environmental component to the projects activities that may affect it.
- Document the methods used to define sensitivity.

3.0 ENVIRONMENTAL EFFECT ASSESSMENT

3.1 PROJECT AND ASSESSMENT SCOPE

3.1.1 Scope of the Project

The scope of the project refers to the various components of the proposed undertaking or activity that will be considered as the project for the purposes of the environmental assessment. This must include the principal undertaking and any accessory activities or works that are directly linked to, or interconnected with, the principal project.

The scope of the project includes the ongoing care and maintenance and any new activities/ undertaking in relation to the project, emergency remediation, and ongoing studies.

3.1.2 Scope of the Assessment

- The following factors and scope of factors must be considered to meet the requirements of CEAA as set out in the definition of environmental effect and as described in Section 16 of CEAA:
  - Environmental effects of the project, including the environmental effects of malfunctions or accidents that may occur in connection with the project;
  - Cumulative environment effects, includes identifying other projects and the cumulative environmental effects of those projects in combination with the proposed project ;
  - Significance and likelihood of the effects;
  - Public comments;
  - Traditional knowledge; and
  - Mitigation measures;

Spatial and temporal boundaries shall be scoped to indicate the range of appropriate scales at which particular baseline descriptions and the assessment of impacts must be presented. The proponent shall identify the criteria that they used to define the scope of the assessment, and describe the methodology used to apply the criteria.

In determining the spatial boundaries to be used in assessing impacts, the proponent shall consider the following:

- the physical extent of the project itself and the territory the proponent will control through lease (surface or sub-surface);
- the extent of aquatic and terrestrial ecosystems potentially affected by the project (e.g. zone of influence should be defined by a range of a species);
- the zones of socio-economic impact including local and territorial.

3.2 FIRST NATIONS AND PUBLIC CONSULTATION

- Provide a distribution list of the parties who have received the Project Description.
- Describe the consultation methods used to identify, inform and solicit input from potentially interested parties. Identify who provided input and their key concerns. Outline similarities or differences in perceived viewpoints.
- Describe how First Nations were consulted and how their specific concerns, issues and comments were identified and incorporated into the EA.
- Describe how First Nation's traditional ecological knowledge was sought, and integrated into the EA including scoping of valued ecosystem and cultural components, description of the existing environmental conditions, predictions of environmental effects, development of mitigation measures, evaluation of significance, and monitoring and follow-up.
- Describe and discuss how public comments or concerns relating to the project and environmental effects were identified and integrated into the EA.

3.3 PREDICTED ENVIRONMENTAL EFFECTS OF THE PROPOSED PROJECT

The environmental assessment report should provide a comprehensive analysis of the potential short and long-term effects of the project on the physical, biological, social, economic and cultural components as identified in Section 2.3 and how the environment may affect the project. This section of the report should also address issues identified in the consultations to date, including the review of the Project Description. In general the proponent should complete an environmental effects assessment using the following steps:

- Describe the potential environmental effects (as defined in CEAA)
- Determine which environmental effects are adverse
- Propose mitigation to deal with each adverse environmental effect (in some cases more than one option for mitigation could be proposed)
- Determine the residual adverse environmental effects that could occur after mitigation has been applied
- Determine the significance of the residual effects
- Determine how likely it is that the residual effects will occur

3.3.1 Methods Used to Predict Effects

- Describe the methods used to predict the potential effects of project activities on environmental components.
- For quantitative modelling and predictions, a discussion of the model assumptions, data

quality, and the confidence levels should be included.

- Identify any consultations and how traditional knowledge was used in determining and predicting environmental effects.

3.3.2 Effects on the Environmental Components

- Describe the predicted effects the project will have on the environmental components, with a focus on VECCs.
- The effects assessment should incorporate comments previously provided to the proponent following the Project Description review as well as concerns raised in ongoing First Nations and public consultation and government review.
- The following are specific comments stemming from the review of the Project Description that dealt with the prediction of the effects of the project on environmental components. Where applicable the proponent is recommended to incorporate these into their EAR.
  - ***At some point a water quality model will be required for both of these sites which demonstrates that the proposed mitigation meets the water quality objective established for Rose and Vangorda Creeks. The information to support this has improved significantly in many areas but we are concerned that the mine has not been measuring flows for several of the key contaminant loads such as X23 on an on-going basis. It is important that the model not rely exclusively on the use of average concentrations but also consider peak loads and minimum flows. In many cases, these scenarios are the most significant factors for regulators to assess whether mitigation proposals are acceptable.***
  - ***Seven observations are presented from the results of the draft 2001 report on the hydro geochemistry of the tailings. There are several additional observations which should have been highlighted as they are of some relevance for weighing the implications of the current proposals. The chemical changes from 1988 to 2001 were assessed in the vertical profile of the tailings in the Original and Second Impoundments at four locations and the following observations noted: a) tailings located above the current water table elevation and/or capillary fringe have undergone a substantial decrease in pH (for example at one site the tailings at a depth of 10m went from a pH of 8.7 down to 4.8); b) at locations where the water table is below the bottom of the tailings have now undergone oxidation throughout the entire profile, and; c) in the unsaturated zone soluble zinc over 1000 mg/kg were frequently found and levels went up to 9000 mg/kg.***
  - *The effect of CO_2 degassing to produce the relatively high pH for the high Zn content of the surface waters of the flooded Faro pit should be considered in interpreting these data.*

3.3.3 Effects of Environmental Changes on Human Health

- Describe the predicted effects of environmental changes on human health.

3.3.4 Effects of Environmental Changes on Socioeconomic Conditions

- Describe the predicted effects of environmental changes on socioeconomic conditions due to the project. Effects on socioeconomic conditions include effects at the population or community level on:
  - the quality of life, or "way of life";
  1. the economy, commercial opportunities, or employment;
  2. the availability of recreational opportunities or amenities;
  3. home life or personal security;
  4. future land uses; and
  5. the future use or production of commercial species or resources.

  An example of effects on socioeconomic conditions is the closure of commercial or recreational fishery because of contaminated fish.

3.3.5 Effects of Environmental Changes on Physical and Cultural Heritage

- Describe the predicted effects of environmental changes, on physical and cultural heritage.

3.3.6 Effects of the Environment on the Project

- Identify the predicted effects of the environment on the project including those identified in Section 2.3 and those associated with extreme events.

3.3.7 Effects of Possible Malfunctions or Accidents

- Identify and describe the possible malfunctions or accidents associated with project activities.
- Identify the proposed safeguards that will be established to protect against possible malfunctions and accidents.
- Identify the contingency/emergency responses procedures that will be in place if a malfunction or accident does occur.

3.4 MITIGATION MEASURES AND RESIDUAL EFFECTS

This section identifies measures to mitigate the adverse environmental effects of the project. Mitigation includes the elimination, reduction or control of adverse environmental effects, including restitution for environmental damage, such as replacement, restoration, compensation, or other appropriate means.

Identification of adverse environmental effects from project components or undertakings is conducted as early as possible in the assessment process. Proponents then identify mitigation measures to eliminate or reduce the adverse environmental effects. The residual effects are then assessed for their significance.

Mitigation measures are part of the project design, defined early in the planning stages of a project, and may be refined throughout the assessment process as adverse environmental effects are clarified or in response to comments from specialist advisors and Responsible Authorities. Mitigation measures are often part of the industry's code of good practice, standards or environmental policies, and can include plans for such areas as water management, waste management, monitoring or decommissioning.

- Mitigation should be proposed for the adverse environmental effects that could occur as a result of activities proposed for the project. A description of strategies, methodologies, schedules and plans for mitigation should be provided in the Environmental Assessment Report. In some cases more than one option for mitigation could be proposed.

- Where damage to the environment will not be completely avoided, restitution measures should be described. This should include a description of commitments, approaches and specific options for restoration, replacement and/or compensation for any potential/predicted environmental damage.

- In addition the following should be provided:
  - Outline contingency measures for accidents, failures and malfunctions.
  - Describe health and safety programs for workers, the public and wildlife.
  - Describe material handling for hazardous materials or dangerous goods and provide any contingency plans for hazardous materials, particularly fuels and reagents or chemicals.
  - Present and describe any Environmental Management Systems or Environmental Protection Plans or programs.

3.5 DETERMINATION OF SIGNIFICANCE

The RA(s) for a project are responsible for making a determination on the significance and likelihood of environmental effects, taking into account the implementation of mitigation measures. However, the proponent is encouraged to conduct an analysis of significance and likelihood as part of the Environmental Assessment Report. The methodology for determining the significance and likelihood of effects (after mitigation has been applied) should be clearly defined, as the RA(s) will analyse the process and rationale used to assist in making a significance determination.

- Clearly document the methods used to determine significance. Sufficient information should be provided to enable reviewers and the public to understand how significance of effects was evaluated. The significance of predicted effects should be evaluated according to the following as appropriate:
  - Magnitude;
  - Geographic extent;
  - Timing, duration and frequency;
  - Degree to which effects are reversible;
  - Ecological and social/cultural context; and
  - Probability of occurrence(likelihood) and confidence levels (certainty) (risk assessment).

- Provide an analysis of the significance of the adverse residual effects including information on the methods used. The methodology description should address both the process (eg. professional judgement, public consultation, expert advisors) and the criteria for significance.

A CEAA Reference Guide entitled "Determining Whether a Project is Likely to Cause Significant Environmental Effects" outlines a process for determining whether environmental effects are *adverse, significant, and likely*. This document can be downloaded from the CEAA web site. The Guide's three step process includes:

1. Deciding whether the environmental effects are adverse
2. Deciding whether the adverse environmental effects are significant
3. Deciding whether the Significant Adverse Environmental Effects are likely.

3.6 CUMULATIVE EFFECTS ANALYSIS

A cumulative effects assessment for the project is a requirement under CEAA. Cumulative effects are the effects that are likely to result from the project in combination with other projects or activities that have been or will be carried out. The cumulative effects must result at least in part from the project being proposed, and only those environmental effects of the project which interact or accumulate with effects from other projects or activities are to be included as potential cumulative effects.

In the case of future projects or activities, there must be reasonable certainty of occurrence. Therefore, for this project the cumulative effects assessment should include all certain and all reasonably foreseeable projects. Reasonably foreseeable projects will include those that have entered the assessment process under CEAA, those where a right has been issued with respect to use of land or water resources, and those where binding commitments have been made by governments. The following projects/activities should be included in the cumulative effects assessment for the proposed project:

- Remediation/removal of the Fresh Water Storage Dam,

- Ketza River Mine, and
- Hunting and trapping in the area.

Additional direction as to what is required for the cumulative effects assessment can be obtained from the "Cumulative Effects Assessment Practitioners Guide" which can be downloaded from the CEAA web site. As well, the "Users Guide for Level 1 Screening of Cumulative Effects" prepare by DIAND Yukon Region provides valuable information to assist with cumulative effects assessment.

The intent of the cumulative effects assessment is to assess potential environmental effects over a larger (i.e., "regional") area, that may cross jurisdictional boundaries, including effects due to natural perturbations affecting environmental components and human actions, and assess those effects during a longer period of time into the past and future.

- Describe the activities of the other projects identified in the scoping, and indicate the environmental effects that are expected.
- Discuss the predicted environmental effects of the project in context of the other projects already underway or that will occur.
- Document the sources of information used to identify other projects, and if possible briefly describe the methods used to determine the environmental effects of these other project activities.
- Predict the cumulative effects.
- Suggest how these cumulative effects should be avoided, mitigated, and managed.
- Identify how the proponent plans to monitor residual cumulative effects.

3.7 MONITORING AND FOLLOW-UP PROGRAM

- Clearly define and identify a follow-up program to:
  - verify the accuracy of the environmental assessment and the predicted performance of the Project;
  - determine the effectiveness of any mitigation measures implemented and the need for modification to those measures to ensure impact predictions remain valid;
  - verify compliance with approval conditions, and;
  - identify unanticipated effects and environmental problems.
- Specify who is responsible for financing and carrying out the follow-up program.
- Describe how the results of the monitoring program will be used to refine or modify management plans, commitments and policies.
- Describe how the results of the monitoring program will be used to implement additional mitigation measures
- Include details such as sampling and analytical protocols, sampling and analytical equipment as an appendix.

3.8 APPENDICES

- Provide references used in the EAR and any supporting data, reports, or other information used to document project information and support assessment conclusions.

Glenn, Shannon (CA - Toronto)

From: Steve Morison [smorison@gartnerlee.com]
Sent: February 5, 2003 8:43 PM
To: Glenn, Shannon (CA - Toronto)
Cc: Eric Denholm; Glenda Fratton; Heidi Klein
Subject: Faro EAR- Other Thoughts

Shannon- I had a chat with Heidi in our Calgary office about our issues with the guidelines for the Faro EAR and she also indicated that the issue here is a clear scope. The RAs are required to provide a "Scope of Project" for a proponent either by agreeing with a Project Description or though clear direction to the proponent. I think this is the real issue with the guidelines. If we had some assurance that the scope was limited to just Care and Maintenance activities, we could interpret the Guidelines in an appropriate manner.

The scope of the environmental assessment for the license renewal should be for Care and Maintenance activities only with a broad strategy for closure (according to the Project Team). I am not sure this is the general understanding in Yukon. The problem we have is that the circumstances have changed since the Project Description was issued--this is leading to confusion. Given the changes that have been decided by DIAND, it is important hat DIAND take a leadership role in the scope of the EA.

Just some thoughts late in the day.

Regards,
Steve

S.R. Morison, Principal
Manager, Northern Canada/Alberta
403-262-4299- ext. 120
403-804-4381 (cell)

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Your file - Votre référence

Our file - Notre référence
5510-5-002J

February 13, 2003

To: RERC Distribution List

Re: Review of Anvil Range Mining Complex Draft EAR Guidelines

On May 31, 2002, Deloitte and Touche Inc. submitted their Anvil Range Mining Corporation Water Licence Renewal- Interim Receivership Project Description to the DIAND Environment Directorate. The project is for the continued care and maintenance of the site for 2004 to 2008 involving the renewal, amendment and amalgamation of the existing two water licences. The project is required to undergo a Screening under the *Canadian Environmental Assessment Act* (CEAA). The Project Description Report, and accompanying Addendum, was distributed to RERC for review.

The attached Draft Environmental Assessment Report (EAR) Guidelines have been developed by the Responsible Authorities (RA's), incorporating where appropriate, comments related to the care and maintenance of the site received during the review of the Project Description. At this time we are requesting that you review the attached documents and provide your comments to the Environment Directorate.

We are interested in any comments that you may have concerning the adequacy of the information being requested in the EAR Guidelines in relation to the proposed care and maintenance of the site. Our intention is to issue Final Environmental Assessment Report (EAR) Guidelines to the proponent, incorporating comments received during this review.

We would appreciate your comments by 16:30 on March 5, 2003. Please provide both electronic and hard copies. Feel free to call me at 667-3865, email gomml@inac.gc.ca, if you require more information or additional time to review the document. Please call Carenn Kormos at 667-3251 if additional copies of the Draft EAR Guidelines are required.

Sincerely,

Leslie Gomm
Manager, Project Assessment

cc: Deloitte & Touche - Shannon Glenn

Canada

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Your file - Votre référence

Our file - Notre référence
5510-5-002J

February 13, 2003

Chief Jack Caesar
Ross River Dena Council
Ross River, Yukon
Y0B 1S0

Dear Chief Caesar:

Re: Review of Anvil Range Mining Complex Draft EAR Guidelines

On May 31, 2002, Deloitte and Touche Inc. submitted their Anvil Range Mining Corporation Water Licence Renewal- Interim Receivership Project Description to the DIAND Environment Directorate. The project is for the continued care and maintenance of the site for 2004 to 2008 involving the renewal, amendment and amalgamation of the existing two water licences. The project is required to undergo a Screening under the *Canadian Environmental Assessment Act* (CEAA). The Project Description Report, and accompanying Addendum, was distributed to the Ross River Dena Council (RRDC) for review.

The attached Draft Environmental Assessment Report (EAR) Guidelines have been developed by the Responsible Authorities (RA's), incorporating where appropriate, comments related to the care and maintenance of the site received during the review of the Project Description. Abandonment and reclamation of the site is not included in the scope of this project. DIAND and YTG have decided to remove the responsibility for the abandonment and reclamation of the site from the Interim Receiver and have made it a direct government responsibility. The format of this new management structure is presently under development. Comments provided by RRDC related to the long term management of this site, including abandonment and reclamation, will be compiled and forwarded to the new Faro management team.

At this time we are requesting that you review the attached documents and provide your comments to the Environment Directorate. We are interested in any comments that you may have concerning the adequacy of the information being requested in the EAR Guidelines in relation to the proposed care and maintenance of the site. Our intention is to issue final Environmental Assessment Report (EAR) Guidelines to the proponent, incorporating comments received during this review.

As discussed during the January TAC meeting, myself and Ian Church, Director of DIAND Environment Directorate, would like to come to the community to discuss these draft guidelines. Preliminary discussions with Doris Dreyer indicate that February 25th may work for the community. I look forward to confirming this with you and coming to Ross River.

We would appreciate your comments on the draft guidelines by 16:30 on March 7, 2003. Please provide both electronic and hard copies. Feel free to call me at 667-3865, email gomml@inac.gc.ca, if you require more information or additional time to review the document. Please call Carenn Kormos at 667-3251 if additional copies of the Draft EAR Guidelines are required.

Sincerely,

Leslie Gomm
Manager, Project Assessment

cc: Doris Dreyer
RRDC - Jason Acklack
SNC-Lavalin - Stephen Lindley
Deloitte& Touche - Shannon Glenn letter only

DRAFT

INFORMATION GUIDELINES

for the preparation of an

ENVIRONMENTAL ASSESSMENT REPORT

for

Anvil Range Mining Corporation - Interim Receivership
Water Licence Renewal

Prepared by

Environment Directorate, Yukon Region - Indian and Northern Affairs Canada

February 13, 2003

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PART I - OVERVIEW

1.0 INTRODUCTION

On May 31, 2002, Deloitte and Touche Inc. submitted their Anvil Range Mining Corporation - Interim Receivership Project Description to the Department of Indian and Northern Affairs Canada (DIAND). The Anvil Range project triggered an environmental assessment pursuant to the *Canadian Environmental Assessment Act* (CEAA). The Project is designed to continue care and maintenance for 2004-2008 involving the application to amalgamate two existing water licences into one. The project is, as such, required to undergo a Screening under CEAA. Upon receipt of the Project Description Report, DIAND undertook a review as laid out in the Regulations Respecting the Coordination by Federal Authorities of Environmental Assessment Procedures and Requirements as required under CEAA, to determine which federal departments were Responsible Authorities (RA's). DIAND and DFO identified themselves as RA's. The Project Description Report also underwent a First Nations public, governmental review with comments from this review forwarded to the proponent, Deloitte and Touche Inc.

The following Environmental Assessment Report Guidelines have been developed by the RA's. Where appropriate, information requests stemming from the comments received during the review of the Project Description have been incorporated into the applicable sections of the guidelines. Additional comments are outlined in Appendix A. Stakeholders have been given an opportunity to comment on these guidelines and their comments have been considered and incorporated as appropriate.

1.1 PURPOSE OF THE GUIDELINES

These guidelines provide Deloitte and Touche with guidance and direction for the preparation of the proponent's Environmental Assessment Report (EAR) that must be completed to enable the RA's to complete the Screening Report. While these guidelines provide the basis for conducting the environmental assessment and preparing the report, it is the responsibility of the proponent to provide sufficient information and analyses to allow the evaluation of the potential adverse environmental effects of the proposed project. It is up to the proponent to demonstrate that it has identified the issues relevant to the assessment of the project, that it has an understanding of and a respect for the physical, biological and socio-economic environments into which the project will be introduced, and that it understands the ways in which the project will affect these environments. The EAR should also demonstrate that the proponent has assessed the significance of the effects likely to be caused by the project, has identified measures to mitigate adverse effects and has identified a program to monitor effects and to refine mitigation over the life of the project, if required.

Following the issuance of these guidelines, the proponent will, based on existing and available information, prepare and submit an Environmental Assessment Report that addresses the requirements of the guidelines. The findings of the environmental assessment report and subsequent

history and instruction from their elders, an in-depth understanding and knowledge base of their local and regional land base. This knowledge includes an understanding of the functioning of ecosystems (resources abundance, distribution and cycles); land and resources management; social, economic and cultural conditions, and the relationships between these factors.

Traditional knowledge is, therefore, also a valuable source of information for project assessment, as it can be used in combination with scientific information to confirm evidence or provide more detailed information than is otherwise available. The proponent is therefore required to consider available traditional knowledge in various stages of the project assessment, including scoping of valued ecosystem and cultural components (VECCs) and the description of existing environmental conditions.

In recognition of intellectual property rights of traditional knowledge holders, the environmental assessment report may not include all of the original traditional knowledge that has been collected. However, information must be sufficient to allow reviewers to derive conclusions about the rationale for decisions made in the report that are based upon traditional knowledge that has been collected.

1.4 PRESENTATION OF THE ENVIRONMENTAL ASSESSMENT REPORT

1.4.1 Conformity

The Proponent is expected to observe the intent of the guidelines and to identify and describe environmental and socio-economic effects that are likely to arise from the Project including those not explicitly identified in the guidelines. Information provided should be substantiated through data, design, experiences or other information that verifies, confirms or supports the assertion advanced. It is possible that these guidelines include matters which, in the judgement of the Proponent, are not relevant or significant to the Project. If such matters are omitted from the EAR, they should be clearly indicated so that the reviewers, public, First Nations, and other interested parties have an opportunity to comment on this judgement. Where the RA's disagrees with the Proponent's statements in this regard, the RA's may require the Proponent to provide additional information.

1.4.2 Format and Presentation

The format of the EAR is largely left to the discretion of the proponent although reviewers must be able to clearly identify where specific issues have been addressed and directions followed. If sections overlap in content, then information should be cross-referenced rather than repeated.

The proponent should identify in a list of references all sources of information used in the preparation of the EAR. Supporting documentation should be provided in separate volumes or appendices and should be referred in the main EAR text.

PART II ENVIRONMENTAL ASSESSMENT REPORT GUIDELINES

2.0 EXECUTIVE SUMMARY

- Provide a concise non-technical description of key aspects of the proponent, project, and environmental setting.
- Outline key environmental effects and proposed mitigation strategies and measures.
- Submit a summary of project information submitted and consultation efforts with stakeholders and First Nations.
- Describe any uncertainties and public concerns.

2.1 PROJECT SUMMARY

2.1.1 Project Overview

- Provide a brief introduction to the project, the location and the proponent(s).
- Briefly describe the project components, associated activities and scheduling details.
- Review any important context for the assessment.

2.1.2 Project Purpose and Need

- Describe the specific project objectives.
- Indicate the rationale for the project (e.g. environmental effects management).

2.1.3 Timing Considerations

- Describe how timing considerations affect need for the project.

2.1.4 Project Proponent

The RA's are aware that the long term management structure for this site is under development with DIAND and YTG in accordance with the DTA and as such this information will be incorporated into the EAR once it has been developed by DIAND/YTG. In relation to the proposed care and maintenance project, the proponent should:

- Introduce the proponent and the corporate and project management structure. Outline the present management under the Interim Receiver and its relationship with DIAND/YTG.
- Provide important contact information for key personnel involved.
- Indicate any project rights and interests.
- Outline the corporate environmental policy.
- Briefly summarize working relationship with First Nations.

the following section. This section should present information of the key technologies and processes associated with the proposed project. The description of new components should include maps and drawings as necessary . These drawings should be clearly labelled. Applicable design criteria, standards or parameters must be outlined along with the results of any investigations to establish site parameters.

2.2.2.1 Care and Maintenance Plan

- Provide a comprehensive plan for site management that includes the care and maintenance plans for each major component of the mine site and associated infrastructure and activities. This plan should outline the management objectives and actions required to meet them. As well, it will outline the criteria that will be used for making care and maintenance decisions including monitoring, triggers and contingency implementation . This plan should outline the linkages between the management of the various site components and management objectives. This plan should address the management of the site during the five year licence renewal and should include a decision making framework.
- Describe the "mine" water management plans for the site. This should include pit water, water in the tailings impoundment, and seep collection and treatment. Provide details on seepage control measures or design features which will be used to improve effluent water quality.
- Describe all water treatment systems used on site including Faro pit water, Vangorda pit water, Grum pit water and water held and discharged from the tailings impoundment area. Information should be provided on the pit pumping schedules, treatment plant operation, reagent usage, volumetric treatment rates, sludge generation rates (volumes) and sludge quality and stability (chemical and physical).
- Provide sludge management plans for both the Faro and Vangorda treatment systems including location of sludge disposal facilities. These facilities should be sited taking into consideration interim disposal requirements prior to final closure. Provide information on existing sludge management practices.
- Describe the water management plans for "clean" site water, including diversion, withdrawal, drainage operations, stormwater management, sediment control, impoundments. The plans for these systems must consider erosion and sediment control issues on site.
- Describe activities and programs to address wastes not discussed above.
- Describe activities related to the use, transportation, storage and handling of supplies.
- Describe site security and access.
- Describe other routine maintenance activities not addressed above.

2.2.2.2 Proposed new construction/ activities

- Describe in detail any new undertakings being proposed in relation to the care and maintenance of the site including the proposed landfill, bioremediation cell, relocation/remediation of acid generating material and upgrading of diversion channels.

- Provide information regarding studies, related to care and maintenance, to be maintained and/or implemented over the course of the project including;
  - goals and objectives,
  - rationale,
  - incorporation of results from previous studies and investigations,
  - scheduling and timelines, and
  - consultation with various parties during the development, implementation and review of the studies including the relevant government agencies and First Nations.

2.2.3 Accidents and Malfunctions

- Describe emergency/contingency plans for items not included in the Adaptive Management Program including:
  - fuel and other hazardous material spills;
  - spill and/or accidents on the access route within the Yukon;
  - impoundment breach/failure;
  - accidents or malfunctions of project components not covered in the Adaptive Management Program; and
  - general emergency situations such as fire and natural disasters.

2.2.4 Project Schedule

- Provide an expected and realistic timetable of the project. Discuss any seasonal time constraints.

2.2.5 Environmental Monitoring and Protection Plans

- Describe environmental monitoring plans that will be put in place during the care and maintenance of the site to monitor various environmental attributes that may be affected by the operation. This should include water resources, aquatic resources, wildlife monitoring, as well as monitoring programs for physical structures.

2.3 ENVIRONMENTAL SETTING

This section should demonstrate the proponents understanding of and respect for the functioning and health of the physical, biological and socio-economic environments, both in the conditions in the surrounding environment and at the Faro mine site. Emphasis should be place on those components that are likely to be affected by the Project and on those identified as issues of concern during Government, First Nations and Public Consultation. The information should be presented in a concise manner with details and background information provided in appendices.

The "baseline" report submitted as part of the Project Description should be used as a basis for

2.3.1.5.2 Water Quality

- Provide a summary of background and receiving surface water quality data for the project area.
- Provide a summary of background and receiving groundwater quality data for the project area.

2.3.1.5.3 Hydrogeology

- Provide a description of the geological elements and processes that affect the hydrogeology of the project area watersheds.
- Characterize the groundwater regime of the area, depth to groundwater and regional groundwater flow patterns.
- Discuss any changes to the local groundwater regime as a result of mining activities.

2.3.1.6 Aquatic Resources

2.3.1.6.1 Fish Resources

- Provide results of any fish resource studies that have been conducted in the area specifically those which focus on: fish species distribution, metal levels in fish tissues, aquatic and riparian habitat mapping. Include a summary of survey methodology for each of the studies referenced.
- For fish species documented in the area, identify critical and sensitive habitats, spawning periods and locations, rare and/or endangered species and associated habitats of these species.
- Conduct an analysis of fish capture data to delineate species abundance and composition (including estimated population densities) including an assessment of spatial and temporal distribution of species within the project area.
- If available, provide a summary of results from any other fishery-related field work conducted within the affected drainages.
- Provide a map of fisheries resources.

2.3.1.6.2 Benthic Invertebrates

- Provide results of any benthic invertebrate studies that have been conducted in the area including species abundance, richness and spatial distribution.

2.3.1.6.3 Stream Sediments

- Provide, where available, information describing the geological and chemical

- recreational activities (fishing, hunting, gathering, hiking etc.),
- trapping concessions (identify all registered trapping concession holders affected by the project and discuss the frequency, intensity, and location of trapping activities in the area),
- traditional harvesting,
- fisheries including information of cultural, subsistence and commercial fishing activities, and
- commercial wilderness activities (including guided fishing, outfitting, hunting and others as applicable)

2.3.1.9 Heritage Resources

- Describe major heritage resources within the project area including known traditional land use and archeological sites. This should also include areas where projects involving new ground disturbance may take place.

2.3.1.10 Valued Ecosystem and Cultural Components (VECC's)

- Present the selected list of expected VECCs for the project and the methodology and rationale used for selection. Justify VECC boundaries.
- The proponent should describe how Traditional Knowledge was used in the determination of VECCs.

2.3.2 Mine Site Characterization

In this section of the EAR the proponent should describe the environmental conditions at the current mine site, based on the available information, with a focus on those that could potentially have environmental effects on the receiving environment.

2.3.2.1 Geochemistry and Acid Rock Drainage

- Provide details on the geochemistry and acid rock drainage characteristics of the various mine components including tailings, waste rock dumps and pit walls.

2.3.2.2 Site Surface Water Quality and Water Balance

- Provide details on the site surface water quality including a contaminant loading balance for the site outlining contaminant levels and loadings from the various mine components.

2.3.2.2 Site Groundwater Quality

- Provide details on the site groundwater quality

2.3.2.3 Site Soil Quality

- Provide details on the site soil quality including metals and petroleum hydrocarbons.

- the extent of aquatic and terrestrial ecosystems potentially affected by the project (e.g. zone of influence should be defined by a range of a species);
- the zones of socio-economic impact including local and territorial.

3.2 FIRST NATIONS AND PUBLIC CONSULTATION

- Provide a distribution list of the parties who have received the Project Description.
- Describe the consultation methods used to identify, inform and solicit input from potentially interested parties. Identify who provided input and their key concerns. Outline similarities or differences in perceived viewpoints.
- Describe how First Nations were consulted and how their specific concerns, issues and comments were identified and incorporated into the EA.
- Describe how First Nation's traditional knowledge was sought, and integrated into the EA including scoping of valued ecosystem and cultural components, description of the existing environmental conditions, predictions of environmental effects, development of mitigation measures, evaluation of significance, and monitoring and follow-up.
- Describe and discuss how public comments or concerns relating to the project and environmental effects were identified and integrated into the EA.

3.3 PREDICTED ENVIRONMENTAL EFFECTS OF THE PROPOSED PROJECT

The environmental assessment report should provide a comprehensive analysis of the potential effects of the proposed project, including the existing mine site conditions described in Section 2.3.2, on the physical, biological, social, economic and cultural components as identified in Section 2.3.1 and how the environment may affect the project. This section of the report should also address issues identified in the consultations to date, including the review of the Project Description as outlined in Appendix A.

3.3.1 Methods Used to Predict Effects

- Describe the methods used to predict the potential effects of the Project on environmental components.
- For quantitative modelling and predictions, a discussion of the model assumptions, data quality, and the confidence levels should be included.
- Identify any consultations and how traditional knowledge was used in determining and predicting environmental effects.

3.3.2 Effects on the Environmental Components

- Describe the predicted effects the project will have on the environmental components, with a focus on VECCs. This should include the effects of the current mine site conditions, in conjunction with the proposed activities and undertakings, on the receiving

3.4 MITIGATION MEASURES AND RESIDUAL EFFECTS

This section identifies measures to mitigate the adverse environmental effects of the project. Mitigation includes the elimination, reduction or control of adverse environmental effects, including restitution for environmental damage, such as replacement, restoration, compensation, or other appropriate means. In some cases, mitigation measures are included as part of the proposed project such as water treatment and the adaptive management program.

Identification of adverse environmental effects from project components or undertakings is conducted as early as possible in the assessment process. Proponents then identify mitigation measures to eliminate or reduce the adverse environmental effects. The residual effects are then assessed for their significance.

Mitigation measures are part of the project design, defined early in the planning stages of a project, and may be refined throughout the assessment process as adverse environmental effects are clarified or in response to comments from specialist advisors and Responsible Authorities. Mitigation measures are often part of the industry's code of good practice, standards or environmental policies, and can include plans such as water management, waste management, monitoring or decommissioning.

- Mitigation should be proposed for the adverse environmental effects that could occur as a result of activities proposed for the project. A description of strategies, methodologies, schedules and plans for mitigation should be provided in the Environmental Assessment Report. In some cases more than one option for mitigation could be proposed.

- Where damage to the environment will not be completely avoided, restitution measures should be described. This should include a description of commitments, approaches and specific options for restoration, replacement and/or compensation for any potential/predicted environmental damage.

- In addition the following should be provided if not already described as part of the proposed project in Section 2.2:
  - Outline contingency measures for accidents, failures and malfunctions.
  - Describe health and safety programs for workers, the public and wildlife.
  - Describe material handling for hazardous materials or dangerous goods and provide any contingency plans for hazardous materials, particularly fuels and reagents or chemicals.
  - Present and describe any Environmental Management Systems or Environmental Protection Plans or programs.

the following projects/activities:

- Remediation/removal of the Fresh Water Storage Dam,
- Town of Faro,
- Ketza River Mine, and
- Hunting and trapping in the area.

The intent of the cumulative effects assessment is to assess potential environmental effects over a larger (i.e., "regional") area, that may cross jurisdictional boundaries, including effects due to natural perturbations affecting environmental components and human actions, and assess those effects during a longer period of time into the future.

- Describe the activities of the other projects identified in the scoping, and indicate the environmental effects that are expected.
- Discuss the predicted environmental effects of the project in context of the other projects already underway or that will occur.
- Document the sources of information used to identify other projects, and if possible briefly describe the methods used to determine the environmental effects of these other project activities.
- Predict the cumulative effects.
- Suggest how these cumulative effects should be avoided, mitigated, and managed.
- Identify how the proponent plans to monitor residual cumulative effects.

Additional direction as to what is required for the cumulative effects assessment can be obtained from the "Cumulative Effects Assessment Practitioners Guide" which can be downloaded from the CEAA web site. As well, the "Users Guide for Level 1 Screening of Cumulative Effects" prepare by DIAND Yukon Region provides valuable information to assist with cumulative effects assessment.

3.7 MONITORING AND FOLLOW-UP PROGRAM

- Clearly define and identify a follow-up program to:
  - verify the accuracy of the environmental assessment and the predicted performance of the Project;
  - determine the effectiveness of any mitigation measures implemented and the need for modification to those measures to ensure impact predictions remain valid;
  - verify compliance with approval conditions, and;
  - identify unanticipated effects and environmental problems.
- Describe how the results of the monitoring program will be used to refine or modify management plans, commitments and policies.
- Describe how the results of the monitoring program will be used to implement additional mitigation measures
- Include details such as sampling and analytical protocols, sampling and analytical

APPENDIX A - Additional Comments from Review of Project Description

Project Description

Presently the management of the site appears to be component by component, which fails to address the interdependent and conflicting nature of some of the objectives.

It is not clear what meterological conditions have been assumed for the pit pumping programs.

A number of options for alternative treatment schemes, etc. are littered throughout the document. Specific details of these programs, or an approach to managing these types of modifications should be included in the license application for review. Examples of the types of operating modifications we refer to include:

p.48 The mill (treatment system) may be altered, enlarged or otherwise modified as appropriate to increase economic, operational and safety efficiencies

p.48 Other sources of contaminated water may be directed to the mill (treatment system) in the future where this is deemed practical and within the scope of diligent environmental management".

p.48 Implementation of variations on the contingency treatment system.

p.49 Other treatment methods might also be employed on a trial or permanent basis as appropriate to achieve efficient treatment of water

p. 53 Testing of flocculant systems in Sheep Pad Pond

p. 54 Diversion of Grum Creek into Moose Pond as a groundwater recharge scheme may or may not be continued.

A key area of potential hydrogeological impact is Rose Creek and the Rose Creek aquifer. There is discussion of a groundwater contingency program for the North Fork of Rose Creek (Item 39 of licence), however, the trigger program and contingencies require further development, rationalization, and description. In addition, there is no other mention of contingencies for groundwater impacts that may occur in other locations.

Environmental Setting

The "baseline" report submitted as part of the Project Description should be recognized as part of the EAR. The presentation of this information needs to be revised to more accurately reflect site conditions including the following:

- The data presented does not describe true baseline conditions but rather current conditions or an average calculated on the basis of changing conditions over the life span of the facility. The terminology used to describe the findings should be revised to more accurately reflect the true nature of the data presented.
- Some of the data are presented in formats that fail to illustrate obvious conclusions. For example, much of the water quality data for impacted sites is presented as averages, where in some cases the standard deviation is greater than the mean. Mean values provide only very limited useful information at sites where obvious trends are apparent.

a substantial decrease in pH (for example at one site the tailings at a depth of 10m went from a pH of 8.7 down to 4.8); b) at locations where the water table is below the bottom of the tailings the tailings have now undergone oxidation throughout the entire profile, and; c) in the unsaturated zone soluble zinc over 1000 mg/kg were frequently found and levels went up to 9000 mg/kg.

The effect of CO_2 degassing to produce the relatively high pH for the high Zn content of the surface waters of the flooded Faro pit should be considered in interpreting these data.

It is good that water quality data has been collected since the late 1990's. The data is comprehensive and seems complete. It is good that the database includes full metal scans and not merely selective metals as in earlier years.

The 2002 preliminary contaminant loading study probably provides an indication of contaminant loading in its current state. It is unclear how much predictive power this model has or how the model will be applied during the water license application process. However, we suggest the model would be improved using flow weighted averages rather than simple averages for some load sources. It is also unreasonable to expect 100% correlation between measured and predicted loads when one grab sample is often used to represent 6 months of loading (a single time step in model). If the model is to be an important supporting element of the design and operations plan for the site, it is suggested it should be refined.

The document states that the impacts to the underlying aquifer, as measured by zinc concentrations, do not extend beyond the toe of the Rose Creek Dam (Item 6, Section 2.3.5, page 21). Further explanation of the actual measurements of dissolved zinc at this location, and a discussion of the compliance boundary would be necessary for a critical evaluation. Specific criteria for groundwater quality are not outlined.

In addition, there is no mention of predictive modeling of the groundwater conditions being undertaken, which is necessary to evaluate the potential for future impact to the groundwater resources.

Government of Canada / Gouvernement du Canada

MEMORANDUM NOTE DE SERVICE

Security Classification - Classification de sécurité
Our File - Notre référence 5510-5-002J
Your File - Votre référence
Date February 27, 2003

To File,
Anvil Range Water Licence Renewal

From Leslie Gomm,
Project Manager, Environment Directorate

RE: Meeting in Ross River - February 25, 2003 - Faro Relicencing

Attendees: George Smith (RRDC), Doris Dreyer (RRDC Cons.), J. Acklack (RRDC), Steve Lindley - (SNC-Lavelin), John Etzel (RRDC - EDO), Jenny Caesar (RRDC Councilor), Clifford Sterriah (RRDC Councilor), Grady Sterriah (RRDC Elder), George Magrum (Selkirk First Nation), Rob Van Bibber (Selkirk First Nation), Leslie Gomm (DIAND), Ian Church (DIAND)

The meeting was initiated with a statement made by RRDC that as they did not have sufficient funds to provide for a review of the draft guidelines, this meeting was not consultation but an information session. Ian Church stated that for the purposes of this meeting that we would agree to disagree. Leslie Gomm went over the history of the Faro Water Licence renewal project from the receipt of the Project Description to the release of the Draft EAR Guidelines. Handouts are attached for information. Then Ms. Gomm went over how the draft EAR guidelines were generated, the scope of the project and then answered questions.

1. The main issue with RRDC is funding, particularly a longterm stable source of funding for this project and other ones. This is particularly important as they have now been asked to comment on the Fresh Water Storage Dam. DIAND indicated that the INI source of funding that provided them $6000 this year may not be available next fiscal year.
2. Concerns were raised over notification of emergencies at the site, specifically how will the people using the downstream environment be notified of emergencies such as spills that could result in the release of contaminants.
3. DIAND was asked to clarify what was meant by the adaptive management program in the guidelines.
4. Concerns were raised over Traditional Knowledge, specifically how will the requirement to include this in the EAR get to the company. RRDC was happy to see TK in the guidelines, although they questioned the location the discussion TK in the document. DIAND stated that the reason that it was located up front is that TK is over-arching and needs to be included in all aspects of the environment assessment as it pertains to the proposed project. RRDC stated that TK is integral to the First Nation and using TK requires an approved protocol. Presently RRDC and the Kaska's do not have a protocol in place for TK.
5. RRDC commented that they don't feel that the company has been communicating adequately with them. They stated that there need to be a way to appropriately consult with RRDC.
6. The potential for groundwater contamination from the tailings and other structures at the site was a concern raised by all present. DIAND agreed with this concern and stated that this is the main concern with the mine site.

Canada

7. RRDC wanted to know how they would be incorporated into the decision making for the various aspects of the proposed project including care and maintenance and adaptive management.
8. S. Lindley (SNC) stated that there needs to be a closure linkage between the CEAA screening and the water licence application as these two processes are happening at the same time. As well, he would like to see specific reference to the schedule for the next 5 years and some indication of the costs (operating and capital).
9. S. Lindley questioned whether alternatives would be looked at in the screening, specifically for the moving of diversion ditches. DIAND stated that based on recent discussions with the proponent, there is no longer any plans to move ditches within the term of the new licence and therefore alternative locations for them are not being assessed. Should at a later date, a ditch need to be moved, an amendment to the licence and subsequent EA would be required.
10. S. Lindley stated that it was good to see TK in the guidelines but it should be oriented internal to the environmental assessment.
11. Both RRDC and Selkirk First Nation want to have access to up to date monitoring data, such as monthly YTWB submissions and would like to see information in the EAR on how this information, along with copies of reports pertaining to the site, would be disseminated to the communities.
12. Grady Sterriah, a RRDC Elder, provide information on traditional use in the area pre-mining and voiced concerns on impact on this by the construction of the mine such as blocked access and reduction in wildlife species.
13. Concerns were raised on impact on tailings on wildlife in area. DIAND will try and find out if any wildlife from the area has been included in the Northern Contaminant Studies.
14. RRDC stated that they are having financial problems and would like to see ways of getting money and resources to participate with the Faro project.
15. Selkirk First Nation would like to have the proponent to have First Nations actively involved in the monitoring program. They have qualified people who could do this work.
16. The following specific comments on the draft EAR guidelines were raised by D. Dreyer:
    1. Location of the TK section in the document
    2. Last sentence in paragraph 2 - Section 1.3 TK - should be made stronger to be more inclusive.
    3. Section 2.2.2.1 Care and Maintenance - How will RRDC be included in the decision making framework?
    4. Section 2.2.5 - Environmental Monitoring - RRDC happy to see wildlife included in here but would like a chance for input into the program
    5. Section 2.3.1.6.1 - Fish Resources - They like the idea of the fish resource map and would like to see something similar for wildlife.
    6. Section 2.3.1.8 - Socio-economic and Cultural Conditions - The wording needs to be corrected to include traditional land use.
    7. Section 3.7 Monitoring - How would these results be made available.

March 5, 2003

Leslie Gomm
Manager, Project Assessment
Environment Directorate
Northern Affairs Program
Indian and Northern Affairs Canada
#345 – 300 Main Street
Whitehorse, Yukon
Y1A 2B5

RE: Review of Anvil Range Mining Complex Draft EAR Guidelines

Thank you for the opportunity to review the Anvil Range Mining Complex Draft EAR Guidelines. As a general comment I would say that from Energy, Mines and Resource's perspective we believe that the information being requested in the draft guidelines, in respect of the proposed care and maintenance water license application, are adequate. Based on our review, we have only a few minor comments to make, which may provide greater clarity or certainty.

1.0 Introduction

- for the purpose of greater clarity and certainty, it may be worthwhile in the introduction to state that the project has been reduced in scope since the submission and review of the project description and that the guidelines reflect this reduced scope. This would help explain why some comments received on the Project Description Report have not been addressed in the guidelines.

1.2 Scope of Project

- it might be worthwhile, again for greater clarity, to indicate that the Interim Receiver is planning to breach the FWSD in response to a directive (letter of direction) from DFO.

1.4.1 Conformity

- you may consider including a statement in here that if the Proponent feels that there are matters which, in their judgement, are not relevant or significant, you recommend that they discuss with the RAs before making the decision to omit from their EAR.

2.2.2.2 – Proposed New Construction/Activities

- in bullet #4 you acknowledge that a landfill is only one of several possible options for the proposed management of solid waste; however, the first bullet appears to presume there will be a new landfill. Recommend rephrasing of bullet #1 to reflect that a new landfill is not a given.
- Is it the proponents role to indicate the process for review and approval of a proposed project where "inadequate detail is provided"; or is this the role of the RA and the screening report?

2.2.2.3 – Adaptive Management Plan

- are bullets 2-4 steps or stages in the decision making framework described in bullet #1 or are they separate, distinct items?

2.3.1.3 – Surficial Geology/ Geochemistry

- you have asked for surficial geology under 2.3.1.2 – Terrain; here you are asking for "the regional geology of the Faro area, including the Faro, Vangorda and Grum ore bodies"; i.e. the bedrock geology. This section may be more accurately titled Bedrock Geology/Geochemistry.

2.3.1.8 – Socioeconomic and Cultural Conditions

- is the third point to address only non-aboriginal use, with aboriginal use being addressed elsewhere; or should this refer to aboriginal use as well?

Please call the undersigned at 393-7098 if you wish clarification on any of the above.

Sincerely,

Marg Crombie
Energy, Mines and Resources

cc. J. Bowen
R. Hill

Yukon
Environment

March 5, 2003

Indian and Northern Affairs Canada
Environment Directorate
Northern Affairs Program
#345-300 Main Street
Whitehorse, Yukon Y1A 2B5

ATT: Leslie Gomm

RE: Review of Anvil Range Mining Complex Draft EAR Guidelines

Please accept the following as reply to your February 13, 2003 request for comments on the above Guidelines for the care maintenance of the Anvil Range complex. We recognize that these guidelines do not pertain to the abandonment and reclamation of the site but further understand that this issue will be addressed in the Screening Report.

We anticipate that the Fannin sheep population will be a dominant issue under Section 2.3.1.7.3 Wildlife as our Department has gone to considerable lengths to promote this resource as a wildlife viewing opportunity. The issue of wildlife and waterfowl entrapment in the tailings pond complex should also be addressed.

The issue of contaminants uptake resulting from wildlife and waterfowl habituation of the tailings area should be examined. Much of this information will be of an anecdotal nature from both local residents and First Nations.

The loss of wildlife habitat resulting from the extraction of borrow materials to satisfy the requirement for cover material for tailings and waste rock dumps may be an area of concern. We note however, that this may be more of an issue during the abandonment and reclamation assessment but nonetheless, it is anticipated that some quarrying activities and reclamation will occur over the next 5 years of this Licence renewal.

We are glad to see that "Effects of the Environment on the Project" are mentioned in Section 3.3.6 - Page 16. This section will conceivably include information as it relates to the analysis of the effects of climate change on the various water balance and stream flow modeling scenarios at the site (i.e. extreme weather events).

Page 17, third last bullet identifies information requirements be included for "health & safety programs for workers, the public and wildlife." We expect that access control and/or fencing of certain sites will be considered (for instance the tailings pond).

Lastly, we believe it is fair to assume that there will be reclamation related activity in support of final abandonment during the 5-year term of this proposed new Water Licence. This does not appear to have been adequately addressed in the EAR draft Guidelines.

For clarification on any aspect of the above please call the undersigned at 667-5409 or Mr. Chuck Hubert at 667-3696.

Sincerely,

Original signed by

Jon Bowen
Manager, EA Section

Cc Marg Crombie

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Deloitte & Touche

March 6, 2003

Ms. Leslie Gomm
Manager, Project Assessment
DIAND Environment Directorate
345-300 Main St.
Whitehorse YT Y1A 2B5

Dear Leslie:

Water Licence Renewal CEAA Process - Comment on the Draft Guidelines

Thank you for providing us with the opportunity to comment on the Draft Guidelines issued by DIAND Environment Directorate on February 13, 2003. These guidelines relate to our submissions (*Project Description* dated May 31, 2002 and *Project Description Supplement* dated September 16, 2002) relating to the renewal of the water licences for the Anvil Range properties. We had submitted these documents in our capacity as Interim Receiver of Anvil Range Mining Corporation. Further to our discussions, we look forward to receiving the Final Guidelines in early March 2003.

We are pleased to have taken part in the public consultation process and to see that the Draft Guidelines incorporate a number of useful comments and suggestions that were generated from that process. We look forward to working with all of the parties in an open and responsive manner to continue to move this project ahead.

We have outlined below several specific comments regarding the Draft Guidelines that we put forward for your consideration. These comments are made to confirm our understanding of the intent and expectations of certain clauses.

Section 2.1.4:

We will include and summarize the information regarding the DIAND/YTG Project Management team on the basis of our understanding of this matter at the time of writing of the Environmental Assessment Report. The formation of the management team is not under the Interim Receiver's control. As such, we will obtain this information from the Project Management team.

Sections 2.2.2, 2.2.2.2, 2.2.2.4, 2.3, and 2.3.1.7.2:

Our overall understanding of the intent of the Draft Guidelines is to request information that is appropriate to, and sufficient for the assessment of, environmental effects of care and maintenance activities at the site and to identify possible adverse effects and evaluate proposed mitigation measures.

Relating to the request for 'detailed information' regarding designs and operating procedures for proposed project activities, we understand that the level of detail required must be sufficient to allow reviewers to assess that the activities are both feasible and provide adequate environmental protection. We envision that the Water Licence Application will present additional detail regarding proposed project activities which will allow for the regulatory process to be successfully completed.

As regards to Section 2.3 ("Environmental Setting "), our understanding is that the Draft Guidelines are requesting information to be provided at a level of detail that is consistent with the level of information provided in Volume II of our Project Description submission ("Anvil Range Mine Complex 2002 Baseline Environmental Information - Volume II of II, 2002 Project Description").

Additionally, it is our understanding from the statement of the scope of the project, that any information that relates to long term reclamation planning and not to the proposed care and maintenance activities, is not requested to be included in the EAR (i.e. Section 2.3.1.7.2 bullet 2).

Appendix A, Environmental Setting and Effect Assessment Sections:

It is our understanding that the information provided in the second and third sections of Appendix A ("Additional Comments from Review of Project Description"), with the two exceptions referred to below, is provided for reference and interest and are not requests for information to be included into the EAR. Our conclusion in this regard stems from the fact that these comments relate to reclamation planning rather than to the proposed care and maintenance activities or consist of constructive criticism of our Project Description submissions. We will endeavour to address the latter comments to the extent that available information permits us do so. The two items which we consider to be excepted from our above-stated conclusion are paragraphs three and four of the Environmental Setting Section. These relate to community concerns expressed by Ross River. We will consider these to be a direct inclusion into sections 2.3.1.8 and 2.3.1.9 of the Draft Guidelines.

In closing, the Interim Receiver has endeavoured, since the beginning of the CEAA process, to respond to enquiries and requests and to provide all necessary submissions with all due haste. As such, we have begun the compilation of the Environmental Assessment Report in order to be in a position to respond to the Final Guidelines in a complete and timely manner. This proactive work will, we hope, facilitate the Environmental Assessment and Water Licencing processes, working towards issuance of a new Water Licence by December 31, 2003. In support of this effort, we would appreciate if you could inform us if we have incorrectly interpreted the Draft Guidelines.

We have been grateful for the interest and involvement of stakeholders and First Nations to date and look forward to on-going engagement and dialogue with yourself and these parties with respect to this property.

Yours very truly,
DELOITTE & TOUCHE INC.
in its capacity as Interim Receiver of
ANVIL RANGE MINING CORP.

Shannon Glenn
Manager, Environmental Services
Enterprise Risk Services

c. Wes Treleaven, Deloitte & Touche Inc.

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Your file - Votre référence

Our file - Notre référence
5510-5-0021

March 11, 2003

Shannon Glenn
Deloitte and Touche LLP
Suite 1900
79 Wellington Street West
PO Box 29 TD Centre
Toronto Ontario
M5K 1B9

Re: Final Information Guidelines for the preparation of the Environmental Assessment Report for the Anvil Range Mining Corporation - Interim Receivership - Water Licence Renewal Project

Attached please find the final version of the "Information Guidelines for the preparation of the Environmental Assessment Report for the Anvil Range Mining Corporation - Interim Receivership - Water Licence Renewal" prepared by the Responsible Authorities (RA's) with assistance of the Regional Environmental Review Committee (RERC). These final information guidelines are to guide you in the preparation of the Environmental Assessment Report for the proposed Water Licence Renewal to meet the requirements of a screening assessment pursuant to the *Canadian Environmental Assessment Act (CEAA)* and the mirror legislation *Yukon Environmental Assessment Act (YEAA)*.

Comments received during the review of both the Project Description and the draft guidelines have been incorporated where appropriate. We look forward to receiving your Environmental Assessment Report. Please call me at 867-667-3865 if you have any questions.

Sincerely,

Leslie Gomm
Manager, Project Assessment

cc: Deloitte& Touche - Shannon Glenn

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Our file - Notre référence
5510-5-002J

March 11, 2003

To: RERC Distribution List

Re: Final Information Guidelines for the preparation of the Environmental Assessment Report for the Anvil Range Mining Corporation - Interim Receivership - Water Licence Renewal Project

Attached for your information please find the final version of the "Information Guidelines for the preparation of the Environmental Assessment Report for the Anvil Range Mining Corporation - Interim Receivership - Water Licence Renewal" prepared by the Responsible Authorities (RA's) with assistance of the Regional Environmental Review Committee (RERC). These final information guidelines are to assist Deloitte and Touche Inc. in their preparation of an Environmental Assessment Report for the proposed Water Licence Renewal to meet the requirements of a screening assessment pursuant to the *Canadian Environmental Assessment Act (CEAA)* and the mirror legislation *Yukon Environmental Assessment Act (YEAA)*.

Comments received during the review of both the Project Description and the draft guidelines have been incorporated where appropriate. To those of you who provided comments and suggestions on the Project Description and the draft version of this document, thank you for your assistance and careful input.

Sincerely,

Leslie Gomm
Manager, Project Assessment

cc: Deloitte& Touche - Shannon Glenn

Canada

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INFORMATION GUIDELINES

for the preparation of an

ENVIRONMENTAL ASSESSMENT REPORT

for

Anvil Range Mining Corporation - Interim Receivership
Water Licence Renewal

Prepared by

Environment Directorate, DIAND and the Responsible Authorities (RA's)
with assistance of the Regional Environmental Review Committee (RERC)

March 10, 2003

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PART I - OVERVIEW

1.0 INTRODUCTION

On May 31, 2002, Deloitte and Touche Inc. submitted their Anvil Range Mining Corporation - Interim Receivership Project Description to the Department of Indian and Northern Affairs Canada (DIAND). The Anvil Range project triggered an environmental assessment pursuant to the *Canadian Environmental Assessment Act* (CEAA). The Project is designed to continue care and maintenance for 2004-2008 involving the application to amalgamate two existing water licences into one. The project is, as such, required to undergo a Screening under CEAA. Upon receipt of the Project Description Report, DIAND undertook a review as laid out in the Regulations Respecting the Coordination by Federal Authorities of Environmental Assessment Procedures and Requirements as required under CEAA, to determine which federal departments were Responsible Authorities (RA's). DIAND and DFO identified themselves as RA's. The Project Description Report also underwent a First Nations, public, governmental review with comments from this review forwarded to the proponent, Deloitte and Touche Inc. Since the submission and review of the Project Description, the scope of the project was reduced to only care and maintenance related activities. These Guidelines reflect this change in scope.

The following Environmental Assessment Report Guidelines have been developed by the RA's. Where appropriate, information requests stemming from the comments received during the review of the Project Description have been incorporated into the applicable sections of the guidelines. Additional comments are outlined in Appendix A. Stakeholders have been given an opportunity to comment on these guidelines and their comments have been considered and incorporated as appropriate.

1.1 PURPOSE OF THE GUIDELINES

These guidelines provide Deloitte and Touche with guidance and direction for the preparation of the proponent's Environmental Assessment Report (EAR) that must be completed to enable the RA's to complete the Screening Report. While these guidelines provide the basis for conducting the environmental assessment and preparing the report, it is the responsibility of the proponent to provide sufficient information and analyses to allow the evaluation of the potential adverse environmental effects of the proposed project. It is up to the proponent to demonstrate that it has identified the issues relevant to the assessment of the project, that it has an understanding of and a respect for the physical, biological and socio-economic environments into which the project will be introduced, and that it understands the ways in which the project will affect these environments. The EAR should also demonstrate that the proponent has assessed the significance of the effects likely to be caused by the project, has identified measures to mitigate adverse effects and has identified a program to monitor effects and to refine mitigation over the life of the project, if required.

Following the issuance of these guidelines, the proponent will, based on existing and available

information, prepare and submit an Environmental Assessment Report that addresses the requirements of the guidelines. The findings of the EAR and subsequent consultations will assist in the preparation of the Screening Report required by the RA's in order to fulfill their obligations under CEAA.

1.2 SCOPE OF THE PROJECT

Proper scoping of the project and its assessment is critical to the EA process. It ensures that both the proponent and the RA's have a clear and common understanding of the project components and activities, boundaries (both spatial and temporal), key VECCs, and level of detail required for the EA. Scoping is the responsibility of the RA's. The scope of the project and the scope of the assessment define the components of a proposed project and the environmental effects that should be included in an EA under CEAA.

According to the Responsible Authorities Guide for the CEAA (FEARO, 1994), the scope of the project refers to those components of the proposed project that should be considered part of the project for the EA. In determining scope of the project for this EA, the RA's must consider which physical works and undertakings in relation to those physical works fall within the scope of the project.

The scope of the project for this assessment includes the physical works and undertakings in relation to the care and maintenance and related activities of the Anvil Range Mining Complex. This must include the principal undertaking and any accessory activities or physical works that are directly linked to, or interconnected with, the principal project. In this case the physical work is the actual mine site and the principal undertaking in relation to that physical work is the care and maintenance of the site which includes new activities/undertakings, adaptive management program, ongoing studies and other accessory activities.

Abandonment and reclamation of the Anvil Range Mine Complex is not included in the scope of this project, although the requirement for future abandonment and reclamation of the site will be a mitigation put forward in the Screening Report. DIAND and YTG have decided to remove the responsibility for the abandonment and reclamation of the site from the Interim Receiver and have made it a direct government responsibility. The proposed five year relicencing period is required to enable the preparation, review, and approval of the abandonment and reclamation plan for the site.

The Fresh Water Storage Dam (FWSD) is not included in the scope of this project. The Interim Receiver is planning to breach the FWSD prior to the 2004 spring freshette. In response to a directive from DFO, preliminary plans for this breach were submitted in February 2003. This breach is undergoing a separate environmental assessment under CEAA with DFO as the lead RA.

1.3 TRADITIONAL KNOWLEDGE

Deloitte and Touche Inc. shall make all reasonable efforts to incorporate traditional knowledge into the Environmental Assessment Report where applicable. First Nations peoples living on the land and harvesting its resources have developed, over thousands of years and through observation, oral history and instruction from their elders, an in-depth understanding and knowledge base of their local and regional land base. This knowledge includes an understanding of the functioning of ecosystems (resources abundance, distribution and cycles); land and resources management; social, economic and cultural conditions, and the relationships between these factors.

Traditional knowledge is, therefore, also a valuable source of information for project assessment, as it can be used in combination with scientific information to confirm evidence or provide more detailed information than is otherwise available. The proponent is therefore required to consider available and applicable traditional knowledge in various stages of the environmental assessment of the proposed care and maintenance project, including: scoping of valued ecosystem and cultural components (VECCs); the description of existing environmental conditions; prediction of environmental effects; development of mitigation measures; evaluation of significance; and monitoring and follow-up as required.

In recognition of intellectual property rights of traditional knowledge holders, the environmental assessment report may not include all of the original traditional knowledge that has been collected. However, information must be sufficient to allow reviewers to derive conclusions about the rationale for decisions made in the report that are based upon traditional knowledge that has been collected.

1.4 PRESENTATION OF THE ENVIRONMENTAL ASSESSMENT REPORT

1.4.1 Conformity

The Proponent is expected to observe the intent of the guidelines and to identify and describe environmental and socio-economic effects that are likely to arise from the Project including those not explicitly identified in the guidelines. Information provided should be substantiated through data, design, experiences or other information that verifies, confirms or supports the assertion advanced. It is possible that these guidelines include matters which, in the judgement of the Proponent, are not relevant or significant to the Project. It is recommended that the Proponent discuss these matters with the RA's prior to making a decision to omit them from the EAR. If such matters are omitted from the EAR, they should be clearly indicated so that the reviewers, public, First Nations, and other interested parties have an opportunity to comment on this judgement. Where the RA's disagrees with the Proponent's statements in this regard, the RA's may require the Proponent to provide additional information.

1.4.2 Format and Presentation

The format of the EAR is largely left to the discretion of the proponent although reviewers must be able to clearly identify where specific issues have been addressed and directions followed. If

sections overlap in content, then information should be cross-referenced rather than repeated.

The proponent should identify in a list of references all sources of information used in the preparation of the EAR. Supporting documentation should be provided in separate volumes or appendices and should be referred in the main EAR text.

The proponent should present the EAR in a clear and concise manner. Where the use of technical language cannot be avoided, a glossary defining words and acronyms should be included. The EAR shall make optimal use of maps, charts, diagrams and photographs wherever useful to clarify the text. Maps and diagrams should be presented at a common scale, appropriate to represent the levels of details considered, and where possible allow direct overlay for ease of reference.

Electronic as well as hard copies (in sufficient numbers) of the EAR must be provided to the Environment Directorate.

PART II ENVIRONMENTAL ASSESSMENT REPORT GUIDELINES

2.0 EXECUTIVE SUMMARY

- Provide a concise non-technical description of key aspects of the proponent, project, and environmental setting.
- Outline key environmental effects and proposed mitigation strategies and measures.
- Submit a summary of project information submitted and consultation efforts with stakeholders and First Nations.
- Describe any uncertainties and public concerns.

2.1 PROJECT SUMMARY

2.1.1 Project Overview

- Provide a brief introduction to the project, the location and the proponent(s).
- Briefly describe the project components, associated activities and scheduling details.
- Review any important context for the assessment.

2.1.2 Project Purpose and Need

- Describe the specific project objectives.
- Indicate the rationale for the project (e.g. environmental effects management).

2.1.3 Timing Considerations

- Describe how timing considerations affect need for the project.

2.1.4 Project Proponent

The RA's are aware that the long term management structure for this site is under development byDIAND and YTG in accordance with the DTA. Information will be provided by DIAND/YTG in a separate document once that management structure is finalized. In relation to the environmental assessment of the proposed care and maintenance project, the proponent should:

- Introduce the proponent and the corporate and project management structure. Outline the present management under the Interim Receiver and its relationship with DIAND/YTG.
- Provide important contact information for key personnel involved.
- Indicate any project rights and interests.
- Outline the corporate environmental policy.
- Briefly summarize working relationship with First Nations.
- Outline how reports and information pertaining to the care and maintenance of the site will

be made available to the communities including Ross River, Pelly Crossing and Faro.

2.1.5 Regulatory History

- Outline the regulatory history of the project including Land Tenure and Water Licences.

2.2 PROJECT DESCRIPTION

2.2.1 Definition of the Project

2.2.1.1 Project Background

- Provide an overview project development and ownership history.
- Provide an overview of the current and projected status including updates on changes to the mine site since the cessation of mining and milling operations for both the Faro and Vangorda sites.

2.2.1.2 Project Location

- Provide location description. Present the size, general site layout and legal land descriptions. Indicate where possible land tenure. Provide appropriate maps and geographical coordinates.
- Provide description and map of mine site and lease boundaries.
- Indicate distance to nearest community by road and/or air.
- Summarize project area in relation to drainage basins and eco-regions.
- Present project area topographic maps at appropriate scale.

2.2.1.3 Overall Project Facilities

- Provide a detailed description of the existing mine site facilities and structures at the Faro mine site and Vangorda Plateau including: open pits, waste rock dumps, tailings impoundments, dams and diversions, buildings and infrastructure, fuel storage, water treatment facilities, and other infrastructure. Identify the locations on suitable scale maps and/or drawings.
- Included in this should be a history of the development and operation of the various mine components.

2.2.2 Description of Proposed Project Activities

It should be recognized that the level of detail required for the various project components and activities will vary. For new projects and activities, sufficient design and/or modelling detail must be submitted, along with supporting data, to allow for a detailed technical review of the proposed project component to confirm that it is practical, feasible and will perform as expected.

The proponent shall provide a detailed description of the proposed project activities as outlined in the following section. This section should present information of the key technologies and processes associated with the proposed project. The description of new components should include maps and drawings as necessary . These drawings should be clearly labelled. Applicable design criteria, standards or parameters must be outlined along with the results of any investigations to establish site parameters.

2.2.2.1 Care and Maintenance Plan

- Provide a comprehensive plan for site management that includes the care and maintenance plans for each major component of the mine site and associated infrastructure and activities. This plan should outline the management objectives and actions required to meet them. As well, it will outline the criteria that will be used for making care and maintenance decisions including monitoring, triggers and contingency implementation . This plan should outline the linkages between the management of the various site components and management objectives. This plan should address the management of the site during the five year licence renewal and should include a decision making framework.
- Describe the "mine" water management plans for the site. This should include pit water, water in the tailings impoundment, and seep collection and treatment. Provide details on seepage control measures or design features which will be used to improve effluent water quality.
- Describe all water treatment systems used on site including Faro pit water, Vangorda pit water, Grum pit water and water held and discharged from the tailings impoundment area. Information should be provided on the pit pumping schedules, treatment plant operation, reagent usage, volumetric treatment rates, sludge generation rates (volumes) and sludge quality and stability (chemical and physical).
- Provide sludge management plans for both the Faro and Vangorda treatment systems including location of sludge disposal facilities. These facilities should be sited taking into consideration interim disposal requirements prior to final closure. Provide information on existing sludge management practices.
- Describe the water management plans for "clean" site water, including diversion, withdrawal, drainage operations, stormwater management, sediment control, impoundments. The plans for these systems must consider erosion and sediment control issues on site.
- Describe activities and programs to address wastes not discussed above.
- Describe activities related to the use, transportation, storage and handling of supplies.
- Describe site security and access.
- Describe other routine maintenance activities not addressed above.

2.2.2.2 Proposed new construction/ activities

- Describe in detail any new undertakings being proposed in relation to the care and maintenance of the site including solid waste management facilities, bioremediation cell,

relocation/remediation of acid generating material and upgrading of diversion channels. Available information on schedules and designs should be provided for any proposed upgrade work on the site structures (Faro diversion, Vangorda diversion and seepage collection systems). For purposes of the EAR, these components of the project must be described in as much detail as is available to provide for a review of the technical adequacy and feasibility of the proposed work. Where inadequate detail is provided, further review and approval may be required once the appropriate information is available.

- Outline the proposed work on the diversion systems.
- Describe the size and location of the new facilities. Show the location of the new facilities on the appropriate maps.
- Provide options for the proposed management of solid waste on site which could include a landfill.
- Provide details on the proposed removal/demolition of buildings on site.
- Describe in details the proposed bio-remediation cell. Outline the mechanism for treatment that will be utilized in the bio-remediation cell including source of bacteria, nutrient addition, operation and monitoring, and closure.
- Outline any proposed work planned for the stabilization and/or remediation of the highly reactive materials on site.

2.2.2.3 Adaptive Management Program

An Adaptive Management Program is required to deal with specific environmental problems that may arise during the term of this project and determine what actions will be taken to remediate and/or rectify these problems to prevent environmental effects in the receiving environment. The goal of this program is to handle emergency situations such as groundwater contamination from either tailings or waste rock, Grum pit water management, failure of essential water treatment and water management equipment, water inputs exceed storage capacity, and emergency diversion ditch remediation.

- Describe in details the overall Adaptive Management Plan for the site including:
  - decision making framework for implementation of the plans,
  - a monitoring programs to assess the status of the individual activity or mine site component,
  - triggers/criteria for action based on the above mentioned monitoring program, and
  - outline of what actions will be taken.

2.2.2.4 Proposed Water Licence Amendments

- Describe in detail all planned amendments to the existing water licences including justification as to why these changes are required.

2.2.2.5 Proposed Studies

- Provide information regarding studies, related to care and maintenance, to be maintained and/or implemented over the course of the project including;
  - goals and objectives,
  - rationale,
  - incorporation of results from previous studies and investigations,
  - scheduling and timelines, and
  - consultation with various parties during the development, implementation and review of the studies including the relevant government agencies and First Nations.

2.2.3 Accidents and Malfunctions

- Describe emergency/contingency plans for items not included in the Adaptive Management Program including:
  - fuel and other hazardous material spills;
  - spill and/or accidents on the access route within the Yukon;
  - impoundment breach/failure;
  - accidents or malfunctions of project components not covered in the Adaptive Management Program; and
  - general emergency situations such as fire, extreme events, and natural disasters.
- Outline the procedures that will be used to notify the public, specifically those using the downstream environment, of spills and accidents at the site.

2.2.4 Project Schedule

- Provide an expected and realistic timetable of the project. Discuss any seasonal time constraints.

2.2.5 Environmental Monitoring and Protection Plans

- Describe environmental monitoring plans that will be put in place during the care and maintenance of the site to monitor various environmental attributes that may be affected by the operation. This should include water resources, aquatic resources, wildlife monitoring, as well as monitoring programs for physical structures.

2.3 ENVIRONMENTAL SETTING

This section should demonstrate the proponents understanding of and respect for the functioning and health of the physical, biological and socio-economic environments, both in the conditions in the surrounding environment and at the Faro mine site. Emphasis should be place on those components that are likely to be affected by the Project and on those identified as issues of concern during Government, First Nations and Public Consultation. The information should be presented in a concise manner with details and background information provided in appendices.

The "baseline" report submitted as part of the Project Description should be used as a basis for this section of the EAR. It should be presented in a manner that presents a conservative evaluation of the site and background conditions. Where applicable, preliminary data from the 2002 study program should be incorporated. This section should also incorporate, where applicable, the comments received during the review of the Project Description that are outlined in Appendix A.

2.3.1 Regional Setting

This section provides a description of the regional setting for the Anvil Range Mining Complex area including: climate and atmosphere, soils, geology, terrain, geological hazards, hydrology, hydrogeology, water quality, and aquatic resources.

2.3.1.1 Climate

- Provide a description of general climatic and atmospheric conditions in the project area.

2.3.1.2 Terrain

- Describe the regional setting for the area including such key terrain features as mountains, rivers and lakes.
- Describe the physical geography and surficial geology of the area.

2.3.1.3 Regional Geology/Geochemistry

- Describe the regional geology of the Faro area including the Faro, Vangorda and Grum ore bodies.
- Provide details on the regional geochemistry in the area.

2.3.1.4 Geological Hazards and Seismicity

- Identify and discuss natural features and hazards found within the project area, including slides, avalanches and faults. Provide information on area seismology and earthquake potential for various return periods including maximum credible earthquake (MCE).

2.3.1.5 Water Resources

2.3.1.5.1 Hydrology

- Describe the hydrological setting of the project area.
- Provide information on the hydrological characteristics (including runoff, seasonal distribution, flood frequency and PMF where available) based on the results of relevant

hydrological investigations and streamflow monitoring in the project area.

- Provide details of the 2002Water Balance for the mine area.

2.3.1.5.2 Water Quality

- Provide a summary of background and receiving surface water quality data for the project area.
- Provide a summary of background and receiving groundwater quality data for the project area.

2.3.1.5.3 Hydrogeology

- Provide a description of the geological elements and processes that affect the hydrogeology of the project area watersheds.
- Characterize the groundwater regime of the area, depth to groundwater and regional groundwater flow patterns.
- Discuss any changes to the local groundwater regime as a result of mining activities.

2.3.1.6 Aquatic Resources

2.3.1.6.1 Fish Resources

- Provide results of any fish resource studies that have been conducted in the area specifically those which focus on: fish species distribution, metal levels in fish tissues, aquatic and riparian habitat mapping. Include a summary of survey methodology for each of the studies referenced.
- For fish species documented in the area, identify critical and sensitive habitats, spawning periods and locations, rare and/or endangered species and associated habitats of these species.
- Conduct an analysis of fish capture data to delineate species abundance and composition (including estimated population densities) including an assessment of spatial and temporal distribution of species within the project area.
- If available, provide a summary of results from any other fishery-related field work conducted within the affected drainages.
- Provide a map of fisheries resources.

2.3.1.6.2 Benthic Invertebrates

- Provide results of any benthic invertebrate studies that have been conducted in the area including species abundance, richness and spatial distribution.

2.3.1.6.3 Stream Sediments

- Provide, where available, information describing the geological and chemical characteristics of stream bed sediments (grainsize and total metals analysis) in the project area.

2.3.1.7 Terrestrial Resources

2.3.1.7.1 Soils

- Include, where information available, information on terrain mapping, soil classification, and erosion potential. Descriptions should also include consideration of attributes that influence or facilitate runoff, such as infiltration and rates of percolation, slope, aspect, vegetation, presence of and extent of permafrost and thickness of the active layer.

2.3.1.7.2 Vegetation

- Provide information on any vegetation studies carried out in the project area. Outline the study methodology, results and include any information on identified rare and/or endangered species and ecological reserves.
- Plant communities existing, where information available, should be documented to the species level and note made of the site and community characteristics.

2.3.1.7.3 Wildlife

- Describe, based on available information, major wildlife species abundance and distribution within the project area (which may include rare and/or endangered species).
- Identify and describe critical/key and sensitive habitats and periods of habitat use in the project area.
- Provide information, where available, on wildlife use in the mine area, specifically the tailings area.
- Identify those species that reflect a general level of public and government awareness and concern (Valued Ecosystem and Cultural Components or VECCs) on the basis of perceived intrinsic value, economic importance, traditional use, recreational value, rarity, and sensitivity.
- Provide, based on available information, a map of key wildlife habitat areas.

2.3.1.8 Socio-economic and Cultural Conditions

Provide the following information on aspects that may be affected by the environmental changes resulting from the project. Indicate and identify the information on maps, where possible.

- land tenure and designation (leases, ownership, mining claims, settlement land, Parks, land use plans, special management zones, etc.)
- physical infrastructure (roads, trails, powerlines, communication lines,

habitations, cabins, camps, campgrounds, facilities or other structures)

- current land and resource uses - both commercial, recreational, and non-aboriginal uses such as:
  - recreational activities (fishing, hunting, gathering, hiking etc.),
  - trapping concessions (identify all registered trapping concession holders affected by the project and discuss the frequency, intensity, and location of trapping activities in the area),
  - harvesting,
  - local hunting,
  - fisheries including information of cultural, subsistence and commercial fishing activities, and
  - commercial wilderness activities (including guided fishing, outfitting, hunting and others as applicable)

2.3.1.9 Heritage Resources/Traditional Land Use

- Describe major heritage resources within the project area including known traditional land use (such as hunting, harvesting, trapping, gathering and fishing), historic, archeological and palaeontological sites.
- This should also include areas of new development where ground disturbance may take place.

2.3.1.10 Valued Ecosystem and Cultural Components (VECC's)

- Present the selected list of expected VECCs for the project and the methodology and rationale used for selection. Justify VECC boundaries.
- The proponent should describe how Traditional Knowledge was used in the determination of VECCs.

2.3.2 Mine Site Characterization

In this section of the EAR the proponent should describe the environmental conditions at the current mine site, based on the available information, with a focus on those that could potentially have environmental effects on the receiving environment.

2.3.2.1 Geochemistry and Acid Rock Drainage

- Provide details on the geochemistry and acid rock drainage characteristics of the various mine components including tailings, waste rock dumps and pit walls.

2.3.2.2 Site Surface Water Quality and Water Balance

- Provide details on the site surface water quality including a contaminant loading balance for the site outlining contaminant levels and loadings from the various mine components.

2.3.2.3 Site Groundwater Quality

- Provide details on the site groundwater quality

2.3.2.4 Site Soil Quality

- Provide details on the site soil quality including metals and petroleum hydrocarbons.

3.0 ENVIRONMENTAL EFFECT ASSESSMENT

3.1 PROJECT AND ASSESSMENT SCOPE

3.1.1 Scope of the Project

The scope of the project for this assessment includes the physical works and undertakings in relation to the care and maintenance and related activities of the Anvil Range Mining Complex during the period of the proposed 5 year water licence. This must include the principal undertaking and any accessory activities or physical works that are directly linked to, or interconnected with, the principal project. In this case the physical work is the actual mine site and the principal undertaking in relation to that physical work is the care and maintenance, new activities/undertakings, adaptive management program, ongoing studies and other accessory activities.

3.1.2 Scope of the Assessment

The following factors and scope of factors must be considered to meet the requirements of CEAA as set out in the definition of environmental effect and as described in Section 16 of CEAA:

- The environmental effects of the project, including the environmental effects of malfunctions or accidents that may occur in connection with the project and any cumulative environmental effects that are likely to result from the project in combination with other projects or activities that have been or will be carried out;
- The significance of these effects;
- Comments from the public that are received in accordance with CEAA;
- Measure that are technically and economically feasible and that would mitigate any significant adverse environmental effects for the project; and
- Any other relevant matter that the Responsible Authority may require to be considered.

Spatial and temporal boundaries are scoped to indicate the range of appropriate scales at which particular baseline descriptions and the assessment of impacts must be presented. The temporal scope of this assessment include the environmental effects of the project for the period of the proposed water licence (5 years), plus the duration of any adverse environmental effects triggered during that time period. The proponent shall identify the criteria that they used to define the scope of the assessment, and describe the methodology used to apply the criteria.

In determining the spatial boundaries to be used in assessing impacts, the proponent shall consider the following:

- the physical extent of the project itself and the territory the proponent will control through lease (surface or sub-surface);

- the extent of aquatic and terrestrial ecosystems potentially affected by the project (e.g. zone of influence should be defined by a range of a species);
- the zones of socio-economic impact including local and territorial.

3.2 FIRST NATIONS AND PUBLIC CONSULTATION

- Provide a distribution list of the parties who have received the Project Description.
- Describe the consultation methods used to identify, inform and solicit input from potentially interested parties. Identify who provided input and their key concerns. Outline similarities or differences in perceived viewpoints.
- Describe how First Nations were consulted and how their specific concerns, issues and comments were identified and incorporated into the EA.
- Describe how First Nation's traditional knowledge was sought, and integrated into the EA including scoping of valued ecosystem and cultural components, description of the existing environmental conditions, predictions of environmental effects, development of mitigation measures, evaluation of significance, and monitoring and follow-up.
- Describe and discuss how public comments or concerns relating to the project and environmental effects were identified and integrated into the EA.

3.3 PREDICTED ENVIRONMENTAL EFFECTS OF THE PROPOSED PROJECT

The environmental assessment report should provide a comprehensive analysis of the potential effects of the proposed project, including the existing mine site conditions described in Section 2.3.2, on the physical, biological, social, economic and cultural components as identified in Section 2.3.1 and how the environment may affect the project. This section of the report should also address issues identified in the consultations to date, including the review of the Project Description as outlined in Appendix A.

3.3.1 Methods Used to Predict Effects

- Describe the methods used to predict the potential effects of the Project on environmental components.
- For quantitative modelling and predictions, a discussion of the model assumptions, data quality, and the confidence levels should be included.
- Identify any consultations and how traditional knowledge was used in determining and predicting environmental effects.

3.3.2 Effects on the Environmental Components

- Describe the predicted effects the project will have on the environmental components, with a focus on VECCs. This should include the effects of the current mine site conditions, in conjunction with the proposed activities and undertakings, on the receiving

environment.

- Describe the effects of the proposed care and maintenance activities on risks associated with the physical structures.
- Describe the sensitivity of each environmental component to the projects activities that may affect it. Document the methods used to define sensitivity.
- Water flow and contaminant loading balances can be used to provide a basis for the prediction of effects on the receiving environment.
- The effects assessment should incorporate comments previously provided to the proponent following the Project Description review (Appendix A) as well as concerns raised in ongoing First Nations and public consultation and government review.

3.3.3 Effects of Environmental Changes on Human Health

- Describe the predicted effects of environmental changes on human health.

3.3.4 Effects of Environmental Changes on Socioeconomic Conditions

- Describe the predicted effects of environmental changes due to the project on socioeconomic conditions.

3.3.5 Effects of Environmental Changes on Physical and Cultural Heritage

- Describe the predicted effects of environmental changes on physical and cultural heritage.

3.3.6 Effects of the Environment on the Project

- Identify the predicted effects of the environment on the project including those components of the environment identified in Section 2.3.1 and potential effects associated with extreme events.

3.3.7 Effects of Possible Malfunctions or Accidents

- Identify and describe the possible malfunctions or accidents associated with project activities.
- Identify the proposed safeguards that will be established to protect against possible malfunctions and accidents.
- Identify the contingency/emergency responses procedures that will be in place if a malfunction or accident does occur.

3.4 MITIGATION MEASURES AND RESIDUAL EFFECTS

This section identifies measures to mitigate the adverse environmental effects of the project. Mitigation includes the elimination, reduction or control of adverse environmental effects, including restitution for environmental damage, such as replacement, restoration, compensation, or other appropriate means. In some cases, mitigation measures are included as part of the proposed project such as water treatment and the adaptive management program.

Identification of adverse environmental effects from project components or undertakings is conducted as early as possible in the assessment process. Proponents then identify mitigation measures to eliminate or reduce the adverse environmental effects. The residual effects are then assessed for their significance.

Mitigation measures are part of the project design, defined early in the planning stages of a project, and may be refined throughout the assessment process as adverse environmental effects are clarified or in response to comments from specialist advisors and Responsible Authorities. Mitigation measures are often part of the industry's code of good practice, standards or environmental policies, and can include plans such as water management, waste management, monitoring or decommissioning.

- Mitigation should be proposed for the adverse environmental effects that could occur as a result of activities proposed for the project. A description of strategies, methodologies, schedules and plans for mitigation should be provided in the Environmental Assessment Report. In some cases more than one option for mitigation could be proposed.

- Where damage to the environment will not be completely avoided, restitution measures should be described. This should include a description of commitments, approaches and specific options for restoration, replacement and/or compensation for any potential/predicted environmental damage.

- In addition the following should be provided if not already described as part of the proposed project in Section 2.2:
  - Outline contingency measures for accidents, failures and malfunctions.
  - Describe health and safety programs for workers, the public and wildlife.
  - Describe material handling for hazardous materials or dangerous goods and provide any contingency plans for hazardous materials, particularly fuels and reagents or chemicals.
  - Present and describe any Environmental Management Systems or Environmental Protection Plans or programs.

3.5 DETERMINATION OF SIGNIFICANCE

The RA's for a project are responsible for making a determination on the significance and likelihood of environmental effects, taking into account the implementation of mitigation measures. However, the proponent is encouraged to conduct an analysis of significance and likelihood as part of the Environmental Assessment Report. The methodology for determining the significance and likelihood of effects (after mitigation has been applied) should be clearly defined, as the RA's will analyse the process and rationale used to assist in making a significance determination.

- The significance of predicted effects should be evaluated according to the following as appropriate:
  - Magnitude;
  - Geographic extent;
  - Timing, duration and frequency;
  - Degree to which effects are reversible;
  - Ecological and social/cultural context; and
  - Probability of occurrence (likelihood) and confidence levels (certainty) (risk assessment).

A CEAA Reference Guide entitled "Determining Whether a Project is Likely to Cause Significant Environmental Effects" outlines a process for determining whether environmental effects are *adverse, significant, and likely*. This document can be downloaded from the CEAA web site. The Guide's three step process includes:

1. Deciding whether the environmental effects are adverse
2. Deciding whether the adverse environmental effects are significant
3. Deciding whether the Significant Adverse Environmental Effects are likely.

3.6 CUMULATIVE EFFECTS ANALYSIS

A cumulative effects assessment for the project is a requirement under CEAA. Cumulative effects are the effects that are likely to result from the project in combination with other projects or activities that have been or will be carried out. For this project the cumulative effects assessment should include all existing and all reasonably foreseeable projects. Reasonably foreseeable projects will include those that have entered the assessment process under CEAA, those where a right has been issued with respect to use of land or water resources, and those where binding commitments have been made by governments. The cumulative effects must result at least in part from the project being proposed, and only those environmental effects of the project which interact or accumulate with effects from other projects or activities are to be included as potential cumulative effects.

The cumulative effects assessment for the proposed project should include, but not be limited to,

the following projects/activities:

- Remediation/removal of the Fresh Water Storage Dam,
- Town of Faro,
- Ketza River Mine, and
- Hunting and trapping in the area.

The intent of the cumulative effects assessment is to assess potential environmental effects over a larger (i.e., "regional") area, that may cross jurisdictional boundaries, including effects due to natural perturbations affecting environmental components and human actions, and assess those effects during a longer period of time into the future.

- Describe the activities of the other projects identified in the scoping, and indicate the environmental effects that are expected.
- Discuss the predicted environmental effects of the project in context of the other projects already underway or that will occur.
- Document the sources of information used to identify other projects, and if possible briefly describe the methods used to determine the environmental effects of these other project activities.
- Predict the cumulative effects.
- Suggest how these cumulative effects should be avoided, mitigated, and managed.
- Identify how the proponent plans to monitor residual cumulative effects.

Additional direction as to what is required for the cumulative effects assessment can be obtained from the "Cumulative Effects Assessment Practitioners Guide" which can be downloaded from the CEAA web site. As well, the "Users Guide for Level 1 Screening of Cumulative Effects" prepare by DIAND Yukon Region provides valuable information to assist with cumulative effects assessment.

3.7 MONITORING AND FOLLOW-UP PROGRAM

- Clearly define and identify a follow-up program to:
  - verify the accuracy of the environmental assessment and the predicted performance of the Project;
  - determine the effectiveness of any mitigation measures implemented and the need for modification to those measures to ensure impact predictions remain valid;
  - verify compliance with approval conditions, and;
  - identify unanticipated effects and environmental problems.
- Describe how the results of the monitoring program will be used to refine or modify management plans, commitments and policies.
- Describe how the results of the monitoring program will be used to implement additional mitigation measures.
- Include details such as sampling and analytical protocols, sampling and analytical

equipment as an appendix.

3.8 APPENDICES

- Provide references used in the EAR and any supporting data, reports, or other information used to document project information and support assessment conclusions.

PREVIOUS CEAA
SCREENING

YUKON TERRITORY
WATER BOARD

Canadian Environmental Assessment Act

Level I Screening
Water Resources Division, Northern Affairs Program
Yukon Region

RECEIVED Hand (Reams email)

Water Licence Application - QZ95-003
Anvil Range Mining Corp. Faro

APPL. NO QZ95003

1. General Environmental Assessment File Information

Application Number:	QZ95-003
FEAI I.D. Reference Number:	
Project Title:	Anvil Range Mining Corp. Faro
Alias Project Title:	Faro Mine
Proponent:	Anvil Range Mining Corporation, Postal Bag 1000, Faro, Yukon, Y.T., Y0B 1K0
Subject Descriptors:	Mining
EA Type:	Screening
EA Start Date:	12/06/95
EA Determination:	20(1)(a) - taking into account the implementation of any mitigation measures that the responsible authority considers appropriate, the project is not likely to cause significant adverse environmental effects, the responsible authority may exercise any power or perform any duty or function that would permit the project to be carried out and shall ensure that any mitigation measures that the responsible authority considers appropriate are implemented.
EA Determination Date:	November 8, 1996

2. Responsible Authority Identification

Lead Responsible Authority:	DIAND
Screening Division:	Water Resources
Lead Responsible Authority Contact:	Bill Slater, Water Resources Division, 345-300 Main St., Whitehorse, Yukon, Y1A 2B5, (403)667-3147
Responsible Authority Reference Number:	34
Lead Responsible Authority Trigger:	Law List Approval
Lead Type of Approval:	Water Licence
Status of Approval:	Amendment

Exhibit 91

Status of Approval:	Amendment
Other Responsible Authorities:	None
Integrated Screening?	No
Other Triggers:	None
Other Types of Approval:	None
Project File Location:	Water Resources

3. Project Location

Region:	Yukon
Topographic Map Sheet:	NTS 105K
Geographic Location Name Code:	Faro, Yukon
Latitude Minimum:	62.35
Latitude Maximum:	
Longitude Minimum:	133.48
Longitude Maximum:	
Drainage Region:	Yukon
Watershed:	Pelly River
Street Name:	Postal Bag 1000, Faro, Yukon, Y.T., Y0B 1K0
Nearest Community:	Faro, Yukon
Traditional Territory:	Ross River Dena
Surrounding Land Status:	Federal crown land
Special Designations:	None

4. Project Description

Physical Work:	Mining Infrastructure
Physical Activity:	Mining Activities
Multiple Activities:	Administrative licence changes
Project Category Code:	Areal
Primary Undertaking:	Operation

Background:

The Yukon Territory Water Board issued Licence IN89-001 in January 1990 as a renewal of a previous licence issued in 1985. Licence IN89-001 authorized operation of the Faro mine until January 1997.

In July 1991, Curragh Resources submitted the "Water Recycle and Tailings Deposition Plan", Kilborn Report 350928, and applied for an amendment to incorporate this plan into their water

November 8, 1996

Exhibit 9.1

licence. The Regional Environmental Review Committee (RERC) completed an environmental screening, under the *Environmental Assessment and Review Process Guidelines Order* (EARPGO), of the operational aspects of the above plan. The project received a 12(c) decision under EARPGO (project may proceed with mitigation). In October 1991, the YTWB amended the licence to allow for the processing of Vangorda and Grum ore and for deposit of the resulting tailings behind the Intermediate Dam or in the Faro Pit as outlined in the Kilborn Report.

The licence was further amended in December, 1991, with changes to the security and trust provisions. This amendment was also screened under EARPGO and received a 12(c) decision.

The third amendment, approved in July, 1993, was based upon the "Down Valley Tailings Impoundment Decommissioning Plan" submitted in April, 1991, and the decommissioning aspects of the Kilborn Report submitted in July, 1991. The "Down Valley Tailings Impoundment Decommissioning Plan" outlined several options for decommissioning of the tailings impoundment. Curragh Resources indicated that the preferred decommissioning option involved reprocessing of tailings and placement in the mined-out Faro pit. The RERC completed a screening report which recognized concerns related to the technical and economic feasibility of the proposed tailings abandonment options, especially tailings reprocessing. The report also recognized that those options would require additional review before the impacts could be fully assessed. As a result, the report recommended that Curragh Resources provide a viable alternative, in the absence of information on technical and economic feasibility of the tailings reprocessing option. The screening further noted that an overall decommissioning plan was required for all components of the Faro mine and recommended that an "Integrated Comprehensive Abandonment Plan" (ICAP) be submitted for review and approval. Based upon the absence of either adequate technical and economic feasibility studies or an alternative decommissioning plan, the screening report recommended a 12(d) EARP decision (environmental effects unknown).

At the YTWB hearing, Curragh Resources submitted a proposal for an alternative decommissioning strategy and recognized that additional studies would be required before a decommissioning plan could be finalized. Based on this additional information, the project received a 12(c) decision under the EARPGO (project may proceed with mitigation). The amendment identified specific closure measures for the Down Valley Tailings Impoundment. This amendment also required completion of groundwater studies, changed the monitoring requirements, required completion of abandonment studies, required completion of a tailings reprocessing feasibility study and required submission of an Integrated Comprehensive Abandonment Plan.

The fourth amendment, approved in September 1993, revised the date for submission of the Tailings Reprocessing Feasibility Study. At this time, Curragh Resources also requested an extension for the date of submission of the Integrated Comprehensive Abandonment Plan. The

YTWB did not grant this request. The fourth amendment received a 12(c) decision under the EARPGO.

In November 1994, the Yukon Territory Water Board authorized an assignment of Curragh's water licence to Anvil Range Mining Corporation (Anvil Range).

Project Description:

Anvil Range has requested several amendments to their existing water use licence, IN89-001 (Amendment 4), for operation of the Faro Mine. The amendments are outlined in Table 1, below, as proposed by Anvil Range in their application dated June 8, 1995 and subsequent information provided on September 14, 1995 and July 31, 1996.

Table 1: Proposed Amendments to Licence IN89-001.

No.	Amendment Request and Justification	Existing Licence Condition
1.	Change licensee name and address.	
2.	Consolidate all amendments into a new licence known as IN89-001, Amendment Five	
3.	Extend the expiry date of licence IN89-001 to December 31, 2003 to coincide with the expiry date of Anvil Range's licence for Vangorda/Grum. Both licences are required for Anvil Range to operate.	Existing expiry date of Faro licence is January 30, 1997. Existing expiry date of Vangorda/Grum licence is December 31, 2003.
4.	Revise addresses for mailing correspondence.	
5.	Revise expiry date as in "3" above.	

Exhibit 9.1

6.	Revise Part B, Section 1(a) to remove the requirement to divert Faro Creek into the Faro pit upon commencement of tailings deposition in the pit. Anvil Range considers it environmentally beneficial to allow Faro Creek to discharge directly to the receiving environment without passing through the pit.	The existing licence requires diversion of Faro Creek into the pit, upon commencement of tailings deposit in the pit. This condition is to continue until water levels are adequate to permit recycling of process water.
7.	Revise Part B, Section 3(h) to read as follows; "The Licensee shall, after five years of continuous temporary cessation of operations, implement an approved tailings pond permanent abandonment plan *unless the Licensee has successfully applied to the Board for an extension of this period.*" By the addition of the italicized phrase, Anvil Range wishes to "clarify the intent underlying the original wording and provide liberty to apply for an extension."	The existing licence does not include an explicit statement that the licensee may apply for an extension.
8.	Extend the time limit for submission of as-constructed plans and drawings to 120 days. This would coincide with the time limit stated in the Vangorda/Grum licence.	Existing time limit is 60 days.
9.	Revise Part B, Section 6(b) to refer to Schedule C. The waste rock monitoring aspects of the existing Schedule D will be incorporated into a revised Schedule C. Waste rock dumps will be inspected every two years by a qualified geotechnical engineer and will be visually inspected at least once per year by the licensee's staff.	The existing licence required annual monitoring and included a requirement for reporting in the annual report.

10.	Revise Part B, Section 6(c) to state ". . . shall construct the dumps in accordance with sound engineering practice; additionally, the Licensee shall implement any appropriate stabilization measures that might be recommended as a result of the inspections required by Part B, Section 6(b)."	The existing licence states "shall implement appropriate stabilization measures in accordance with sound engineering practice."
11.	Revise Part B, Section 7(b) to outline the triggers for implementation of groundwater contingency plans outlined in the report "Groundwater Investigation, North Fork of Rose Creek, Faro Mine, Yukon Territory, Report Number A114101, Steffen, Robertson, and Kirsten, December, 1994."	The existing licence requires completion of the report referenced in the proposed amendment. The report has now been completed.
12.	Revise monitoring schedule for sites 2BC-X26, BH-1, BH-2, BH-3 and BH-4 to remove the requirement for monitoring of alkalinity/acidity as $CaCO_3$ and ammonia. Also, X26 would be monitored only while pumping. Anvil Range contends that the above parameters are not required for detecting contamination by pit water and other ARD sources.	The existing licence requires monitoring for alkalinity/acidity as $CaCO_3$ and ammonia at the listed sites. It also requires monitoring at X26, Zone II pit water, on a monthly basis.
13.	Revise monitoring schedule for sites R8, R9 and R10 to remove the requirement for monitoring alkalinity, acidity, sulphate and chloride. Total sulphur will be included as part of the ICP total metals. Anvil Range contends that the above parameters are unnecessary for detecting contamination in Rose Creek from Zone II and the main pit.	The existing licence requires monitoring for alkalinity, acidity, sulphate and chloride at the listed sites.

Exhibit 9.1

14.	Revise the date for completion of a Tailings Reprocessing Feasibility Study to December 31, 2001. The July 31, 1996 submission further revised this to December 31, 1996.	Existing date for submission is December 31, 1995.
15.	Revise date for submission of the Integrated Comprehensive Abandonment Plan (ICAP) for the Faro mine site to November 30, 1996.	Existing date for submission of ICAP is December 31, 1994.
16.	Revise Part D, Section 9(a) to refer only to Schedule D. A revised Schedule D is attached which outlines, in detail, the abandonment-related studies and investigations. In addition, Anvil Range wishes to revise Section 9(b) to remove the requirement for supervision of the program by a professional engineer.	The existing licence refers to the "Faro Mine Abandonment Plan Research and Monitoring Detailed Schedule, August 1, 1988" and requires supervision by a professional engineer.
17.	Revise the date for submission of a temporary abandonment plan for the Main Pit and Faro Creek Diversion to November 30, 1996.	Existing date for submission is December 31, 1993.
18.	Anvil Range proposes to remove all post-abandonment security provisions from the existing licence. The Licence would be amended to allow contribution of equivalent amounts to the trust established under the Canada-Anvil Range Reclamation Security Agreement.	Existing licence provides for General Security of $500,000 and a levy of $0.25 per wet metric tonne of mineral concentrate shipped. The $0.25 levy is to provide for abandonment measures and is to be placed in the Trusteed Environmental Fund.
19.	Several changes to monitoring programs are outlined in Anvil Range's July 31, 1996 submission.	

Exhibit 9.1

Description of Environment

Ecozone:	Boreal Cordillera
Ecoregion:	Yukon Plateau - North

Description of Environment:

Anvil Range Mining Corporation's operations are located in the Pelly River watershed within the North Yukon Plateau Ecoregion. The site is also located in the Tintina Trench, a straight, deep valley formed by a large fault in the earth's crust. The Tintina Trench is an important migration route for many bird species and also influences the regional climate. The area experiences long, cold winters and warm summers. The extreme cold causes extensive areas of permafrost. The Pelly River, downstream of the mining operations is an important salmon river.

The immediate area of Anvil Range's operations has been extensively altered during twenty-five years of mining. The main Faro pit is located in the original channel of Faro Creek which is currently diverted around the pit. The previous mine owner, Curragh Resources, completed mining the Faro pit and Anvil Range is now using the pit for tailings disposal. Previously, tailings were deposited in the Rose Creek valley.

6. Consultation/Referral of Application

Public Consultation?	Yes
Date Referred to Government Departments:	95/07/20 and 95/10/03 and 96/09/03
Date Referred to Public:	95/07/20 and 95/10/03 and 96/09/03
Deadline for Comments:	04/08/95 and 96/09/20

Referral Sent To:	Date Comments Received
K. Simpson, Project Manager, Environment, NAP	23/8/95, 17/11/95
B. Godin, A/Head, Environmental Contaminants Div., DOE	19/10/95
G. Faulkner, Chief, Habitat Biologist, DFO	No Comments Received
K. Leary, Manager, Environ. Assess., Envir. Prot. YTG	5/10/95
C. Pekarik/D. Brent, Research Analyst, Econ. Dev. YTG	No Comments Received
F. Green, Supervisor Lands, CYI	No Comments Received
K. Larson, Envir. Health Officer, Health Canada	No Comments Received
J. Guscott, Manager, Land Resources, NAP	No Comments Received
F. Privett, Manager, Socio-Economic Benefits, NAP	No Comments Received
K. Besso, A/Manager, Mineral Development, NAP	No Comments Received

Exhibit 9.1

Referral Sent To:	Date Comments Received
V. Labelle, ADM, Municipal. & Comm. Affairs, YTG.	No Comments Received
N. Prasad, Chief Mine Safety Officer, Worker's Comp, YTG	No Comments Received
H. Copland, Environmental Geologist, Geology, NAP	No Comments Received
R. Gotthardt, Heritage Branch, YTG	11/8/95
W. Hidinger, Community and Transportation Services, YTG	No Comments Received
N. Sterriah, Chief, Ross River Dena Council	12/10/95
N. Ladue, Ross River Dena Council	No Comments Received
P. Van Bibber, Chief, Selkirk First Nation	No Comments Received
G. Magrum, Selkirk First Nation	No Comments Received
G. Wolchuk, RMO, Ross River	No Comments Received
B. Van Dijken, Yukon Conservation Society	3/8/95

In addition to the above general referral list, Water Resources Division convened a meeting to discuss the screening and related licence matters on October 12, 1995. This meeting was attended by D. Cornett, D. Sherstone and G. Whitley (Water Resources), K. Simpson (DIAND, Environment), V. Enns and B. Godin (DOE), G. Faulkner (DFO), C. Hubert (YTG, Renewable Resources), H. Copland (DIAND, Geology), H. Jones (YCS) and D. Hindy and G. Jilson (Anvil Range). On January 30, 1996, Water Resources circulated a draft screening report for review by the people who attended the meeting. Due to the delay in completing the screening, Water Resources circulated a second draft screening report, on November 4, 1996, to all of the agencies on the original referral list and convened a meeting to discuss the screening report on November 7, 1996. The meeting was attended by B. Slater (Water Resources), Vic Enns, Eric Soprovich (DOE), Scott Herron (YTG), Kirstie Simpson (Environment Directorate) and Malcolm Foy (LGL Limited, on behalf of the Ross River Dena Council).

7. Environmental Issues and Mitigation

Proposed Amendments 1 and 2

Administrative amendments only - no environmental screening issues identified.

Proposed Amendment 3 - Expiry Date

Anvil Range's proposed expiry date for the Faro licence (QZ95-003/IN89-001) will coincide with the expiry date for the Vangorda/Grum licence (IN89-002). The Vangorda/Grum Licence authorizes water use and waste deposits associated with mining at the Vangorda and Grum mines and the Faro Licence authorizes water use and waste deposits associated with milling of the Vangorda and Grum ores. Anvil Range requires both licences to operate and, for administrative reasons, they wish to have the expiry dates of both licences coincide.

Several agencies and organizations expressed concern about the extension of the licence term without additional provisions for review of proposed abandonment plans. Renewal of the Faro licence in 1997 would have provided an opportunity for review and further consideration of the abandonment provisions in the licence, including review of the Integrated Comprehensive Abandonment Plan (ICAP). A simple extension of the licence to 2003 may not allow review of the abandonment provisions until after the depletion of the Grum reserves.

Although Anvil Range has not yet submitted the ICAP, it may include proposals to complete some abandonment activities during operations and before reserves are depleted. The CEAA requires environmental assessment of decommissioning provisions for projects. Until the review has been carried out there is no certainty that the proposed decommissioning plans and activities provide adequate mitigation of identified and potential environmental effects. Once the plan is submitted it must be subjected to a full environmental assessment and receive approval under CEAA before being incorporated into regulatory approvals. This requirement echoes the recommendations included in the June 25, 1993 EARP Decision Report on the Down Valley Tailings Impoundment Decommissioning Plan and the Abandonment Aspects of the Water Recycle and Tailings Deposition Plan.

The decommissioning plan for the Faro mine must be subjected to additional review and only through implementation of the following mitigation measure, should the licence be extended to 2003:

- Upon submission to the Yukon Territory Water Board, the ICAP must be subjected to an environmental screening under the CEAA. Anvil Range, the review agencies and interested parties must work together throughout the review to ensure a complete understanding of the decommissioning issues and acceptability of mitigation. Upon completion of the environmental review, the ICAP must be considered for incorporation as a requirement of the licence.

The Faro licence authorizes a wide variety of activities, structures and operations that are continually changing based upon operational requirements, costs, changing technology and site monitoring. The designs and plans referenced in an existing licence provide the applicant's best approximation for proposed activities. In a project of this magnitude, however, significant changes are inevitable and the environmental impacts associated with the changed plans may also be significantly different. This includes a potential need for changes to the ICAP following submission and initial review.

Several agencies expressed concern about the need for adequate consideration of proposed changes, including environmental review under the CEAA. This CEAA screening cannot directly address the implications associated with future changes to the project. If the licence is extended to 2003, it should contain a mechanism to ensure review of proposed changes to plans, designs

and activities before they are incorporated into regulatory authorizations. The licence extension to 2003 should only be considered through implementation of the following mitigation measure:

- Proposed alterations of the plans, designs and reports referenced in the licence must be submitted for review and approval by the Yukon Territory Water Board and must be incorporated as part of the licence prior to implementation of any of the proposed changes.

Proposed Amendment 4

Administrative amendments only - no environmental screeining issues identified.

Proposed Amendment 5

Issues discussed above under proposed amendment 3.

Proposed Amendment 6 - Faro Creek Diversion

Anvil Range has requested that they not be required to direct the flow of Faro Creek into the Faro Pit. The current licence, in Part B, Section 1(a), requires that Anvil Range redirect the flow of Faro Creek into the pit once tailings deposition in the pit begins. Although tailings deposition in the pit has been underway since Anvil Range resumed operation, the Faro Creek diversion remains intact and flows have not been directed into the pit.

Curragh Resources' Water Recycle and Tailings Deposition Report (Kilborn, 1991) recommended that the flow of Faro Creek be directed into the pit to speed filling. The report concluded that this would allow water recycle to begin at the earliest possible time and that the potentially acid-generating walls of the pit would be submerged as soon as possible. In addition, the report predicted that the fresh water input from Faro Creek would improve process water quality.

Anvil Range's request will have implications on the timing for water recycle, the timing for submersion of pit walls and the timing for construction of the Faro Pit Dam as outlined in the Kilborn Report. Implementation of recycle will reduce potential environmental impacts through a reduction in the company's reliance on fresh water. Submersion of the pit walls through construction of the dam and diversion of the creek would reduce impacts associated with potential ARD in this area. As part of this screening, Water Resources requested that Anvil Range clarify the impacts of maintaining the Faro Creek Diversion on Faro Pit Dam timing, pit filling rates and on the water recycle plans. Anvil Range indicated, in their September 14, 1995 response letter, that the rate of pit filling was not fully understood. They were, therefore, uncertain of the timing related to water recycle. The Kilborn Report.(June, 1991) indicated that the flow of Faro Creek

would provide approximately 20% of the inflow into the pit. The most significant component affecting pit filling is probably the deposit of tailings into the pit. Because of their uncertainty related to pit filling rate, Anvil was also uncertain when the Faro Pit Dam would be required to prevent overtopping into the Zone II Pit although they proposed, in their September 1995 letter that they expected to begin construction of the Faro Pit Dam late in the 1996 season. Construction of this structure has not been initiated to date.

Anvil's July 31, 1996 letter provides additional information about the pit filling rate and estimates that water will reach 3859 feet, mine datum, in May, 1997. This will require either pumping, or construction of the Faro Pit Dam to prevent overtopping into the Zone II Pit. Recent discussions with Anvil Range indicate that they are reconsidering the need to construct the Faro Pit Dam. They have also indicated that they propose to pump for water recycle and will not rely on siphoning (as recommended in the Kilborn Report). Thus, they will not require the Faro Pit Dam for water recycle purposes.

As the water level in the pit approaches the level at which overtopping into Zone II would occur, Anvil Range will need to pump, not only for recycle, but also to discharge excess water. The timing for water discharge or dam construction can be delayed through earlier initiation of water recycle but eventually discharge will occur. Recent water quality sampling in the pit indicates that water from the pit will require treatment before discharge to the environment. Water recycle will greatly reduce the amount of water that will need to be discharged and reduce potential environmental impacts.

The request to maintain the Faro Creek Diversion should be considered only through implementation of the following mitigation measures:

- Anvil Range must submit a contingency plan that outlines measures to prevent overtopping into Zone II. This plan must identify how excess water will be conveyed, treated and discharged. It must also identify triggers that will initiate implementation of the contingency plan.

- Anvil Range must implement water recycle as soon as practicable, but no later than when the water level in the pit reaches 3859 feet, mine datum.

As discussed above, the diversion of Faro Creek also affects the timing for Faro Pit Dam construction. The Faro Pit Dam is an important component of current decommissioning plans and may be included as part of the ICAP. If this Dam is part of the decommissioning plans outlined in the ICAP, it should be constructed as soon as possible to assist in overall decommissioning. Several agencies have, however, raised concerns about the design of the proposed Faro Pit Dam, especially related to seepage and foundation conditions. The condition of the underlying rock at the proposed dam site has not been carefully investigated and the hydrogeological regime is not

clearly understood. Although the Kilborn Report indicates that excess water will be discharged to the Intermediate Dam via the old Faro Creek channel, Anvil Range has not provided details on how this will be achieved under the difficult circumstances provided by the site. Anvil has not provided any information about water discharge options if they choose not to construct the Faro Pit Dam nor have they addressed treatment of discharge water despite current estimates which indicate that water discharge will be required in May 1997.

The request to maintain the Faro Creek Diversion should be considered only through implementation of the following mitigation measures:

- Anvil Range must construct the Faro Pit Dam, as laid out in the Kilborn Report, or must implement similar measures that may be included in the approved ICAP, as soon as possible. Before construction of the Faro Pit Dam, Anvil Range must submit detailed designs for the Faro Pit Dam, spillways, channels and treatment systems for review by regulatory agencies. These plans and designs must receive full consideration and approval before incorporation into regulatory authorizations.

- Anvil Range must address the implications of all Faro Pit Dam timing and pit water levels in the Temporary Abandonment Plan for the Main Pit and Faro Creek Diversion.

Proposed Amendments 7, 8, 9, 10, 11 and 16

These amendments pertain to regulatory matters. No environmental screening issues have been identified.

Proposed Amendments 12, 13, 19 and Changes to Schedules A, C and D - Monitoring Programs

Anvil Range has requested several changes to water quality and physical stability monitoring programs. Several reviewers have expressed concern about general and specific changes and that there may be implications associated with changes to monitoring programs. Changes can be made to the monitoring program provided the following mitigation measure is considered when making these changes:

- The monitoring program carried out by Anvil Range must assure that:
  i) all facilities, structures and systems perform as proposed,
  ii) mitigation proposed to address environmental impacts is effective, and
  iii) environmental impacts are limited to those expected.

Proposed Amendment 14

Several reviewers expressed concern about the original proposal to submit the Tailings

Reprocessing Feasibility Study in 2001. Anvil Range has revised the date to 1996. There are no environmental issues related to this proposal.

Proposed Amendment 15 - Submission of the ICAP

Anvil Range has requested that the submission date for the Integrated Comprehensive Abandonment Plan (ICAP) for the Faro mine site be revised to November 30, 1996. As the company had recently obtained the mine property, completion of the ICAP by the licenced submission date was not feasible considering the complex nature decommissioning the site. As noted above, we recognize the concern that a full environmental assessment of the ICAP is required to ensure that potential environmental effects are properly mitigated. Implementation of the mitigation outlined above under "Expiry Date" will ensure that the ICAP receives the necessary review.

Proposed Amendment 17

No environmental screening issues identified.

Proposed Amendment 18 - Reclamation Security

As discussed above and in previous screening documents, implementation of an appropriate ICAP will mitigate environmental effects of the mining operation and ensure that there are no significant adverse environmental effects. Provision of adequate reclamation security will provide assurance that funding is available for the major costs associated with decommissioning. In order to ensure that there are no long-term environmental implications associated with the proposed amendment of security provisions, the amendment decisions should consider the following aspects:

i) the purpose of the existing Trusteed Environmental Fund (TEF) and the Reclamation Security Agreement,
ii) the availability of reclamation security funds for completion of reclamation activities by either the company or regulatory agencies, and
iii) assessment of the security available at each stage of development measured against the existing reclamation liability.

8. Description of Cumulative Environmental Effects

Cumulative Environmental Effects:

There are recognizable cumulative effects associated with 25+ years of mining at this site. These have not been specifically defined and must be considered during the review of the ICAP. Additional effects will be realized through this amendment, especially those associated with the

extension of the licence term. These effects are mitigable, however, through implementation of an effective ICAP.

Although there is no mining authorized directly under this licence, there are many activities related to tailings deposition, water treatment/discharge, Faro Pit Dam construction, pit filling, water conveyance and milling. All of these aspects must be considered in the ICAP and in the implementation of mitigation measures outlined above, under "Expiry Date", to ensure that cumulative impacts are fully considered as part of abandonment planning and the associated review.

9. Mitigation Measures

Description of Mitigation Measures:

- Upon submission to the Yukon Territory Water Board, the ICAP must be subjected to an environmental screening under the CEAA. Anvil Range, the review agencies and interested parties must work together throughout the review to ensure a complete understanding of the decommissioning issues and acceptability of mitigation. Upon completion of the environmental review, the ICAP must be incorporated as a requirement of the licence.

- Proposed alterations of the plans, designs and reports referenced in the licence must be submitted for review and approval by the YTWB and must be incorporated as part of the licence prior to implementation of any of the proposed changes.

- Anvil Range must submit a contingency plan that outlines measures to prevent overtopping into Zone II. This plan must identify how excess water will be conveyed, treated and discharged. It must also identify triggers that will initiate implementation of the contingency plan.

- Anvil Range must implement water recycle as soon as practicable, but no later than when the water level in the pit reaches 3859 feet, mine datum.

- Anvil Range must construct the Faro Pit Dam, as laid out in the Kilborn Report, or must implement similar measures that may be included in the approved ICAP, as soon as possible. Before construction of the Faro Pit Dam, Anvil Range must submit detailed designs for the Faro Pit Dam, spillways, channels and treatment systems for review by regulatory agencies. These plans and designs must receive full consideration and approval before incorporation into regulatory authorizations.

- Anvil Range must address the implications of Faro Pit Dam construction timing and pit

water levels in the Temporary Abandonment Plan for the Main Pit and Faro Creek Diversion.

- The monitoring program carried out by Anvil Range must assure that:
  i) all facilities, structures and systems perform as proposed,
  ii) mitigation proposed to address environmental impacts is effective, and
  iii) environmental impacts are limited to those expected.

10. Significance

After taking into account the above mitigation measures, are any of the adverse environmental effects significant?	No
If yes, Which Ones?	n/a

11. Likelihood of Occurrence

Are any of the above adverse, significant, environmental effects likely to occur?	n/a
If yes, Which Ones?	n/a

12. CEAA Determination Recommendation

20(1)(a) -taking into accouint the implementation of any mitigation measures that the responsible authority considers appropriate, the project is not likely to cause significant adverse environmental effects, the responsible authority may exercise any power or perform any duty or function that would permit the project to be carried out and shall ensure that any mitigation measures that the responsible authority considers appropriate are implemented.

13. Follow-up Program

Follow-up Program Required?	No
Responsibility for Follow-up Program:	n/a

Follow-up Program Description (Indicate if part of Licence/Permit): n/a

Estimated Follow-up Program Termination Date: n/a

14. Screening Report and/or Decision Report

Public Notified of Screening: No
Public Comments on Screening: n/a

Record of Comments Attached to Screening Form? n/a

15. Authorization

Prepared By:

B. Slater
Water Resources Division

Signature: Bill Slater Date: 96/11/08

Authorized By:

D. Sherstone
Regional Manager
Water Resources Division

Signature: D. G. Sherstone Date: 96/11/08

THE DEPARTMENT OF INDIAN AFFAIRS
AND
NORTHERN DEVELOPMENT

WHITEHORSE, YUKON

SCREENING REPORT
UNDER THE ENVIRONMENTAL ASSESSMENT AND REVIEW PROCESS GUIDELINES ORDER

CURRAGH RESOURCES INC.
VANGORDA PLATEAU DEVELOPMENT PROPOSAL

JULY 20, 1990

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THE DEPARTMENT OF INDIAN AFFAIRS AND NORTHERN DEVELOPMENT

ENVIRONMENTAL ASSESSMENT REVIEW PROCESS
SCREENING REPORT
VANGORDA PLATEAU DEVELOPMENT PROPOSAL
CURRAGH RESOURCES INCORPORATED

A. INTRODUCTION

The EARP process ensures that as early in the planning process as possible and before any irrevocable decisions are made, the environmental implications of all proposals for which the Federal Government has decision making authority are fully considered. The Federal Government shall include in its considerations: the potential environmental effects of the proposal and the social effects directly related to those environmental effects, including any effects that are external to Canadian Territory; and the concerns of the public regarding the proposal and its potential environmental effects. Consideration of the proposal may include such matters as the general socio-economic effects of the proposal and the technology assessment of and need for the proposal.

The Curragh Resources Vangorda project is subject to EARP by virtue of Section 6 of the Guidelines Order because it takes place on Federal Crown Land and will have an environmental effect on an area of Federal responsibility. The Minister must comply with the provisions of EARP before a water licence or surface lease are issued for this project.

Satisfaction of the EARP Guidelines Order in this case is contingent upon Curragh Resources Inc. committing to mitigation of potential significant environmental impacts attributed to the Vangorda Plateau Project using known technology, or committing to compensation measures that could prevent any of the adverse environmental impacts from becoming significant. Curragh must also demonstrate that the financial commitment exists to implement the control measures specified for the mitigation of the impacts of acid mine drainage and other identified impacts during operation and after mine closure. DIAND as the lead initiating agency, and in compliance with Section 14 of the Guidelines Order, must ensure that all measures that could prevent potential adverse impacts from becoming significant are implemented.

B. PROJECT IDENTIFICATION

Proponent - Curragh Resources Inc. - Vangorda Plateau Development

File # - RERC N-5510-C1 / WATER LICENCE IN-89-002 / LEASE #'S 13298 AND 13299

Entry Point - The proponent voluntarily entered the process in March of 1987. The proponent was advised in May 1987 that an Initial Environmental Evaluation (IEE) pursuant to EARP was required and formally entered the EARP process at that time. An application for a surface lease was submitted on December 20,1989 and an application for a water licence was submitted on December 18, 1989.

C. DATE OF RECEIPT

Chronology

March 1987

In March, Curragh Resources met with DIAND to present their plans for the development of the Vangorda Plateau and the Vangorda and Grum ore deposits. At this time a document entitled, "Long Range Plan Development Overview" was filed.

May 1987

In May, due to the potential environmental problems associated with the mining of sulphide ore deposits, the Vangorda project was referred to the Regional Environmental Review Committee (RERC) and Curragh was notified that an Initial Environmental Evaluation (IEE) was required. The RERC is an interdepartmental and intergovernmental advisory committee to DIAND, Yukon Region.

September, 1987

In September, a Stage 1 IEE was submitted to the RERC. The submission consisted of the plan for clearing and drainage of the site, some water quality data, consideration of impact from AMD, and preliminary information on sheep.

February, 1989

In February, a draft Stage II IEE was submitted to the RERC consisting of the Project Overview, Baseline Data, and Projected Impacts.

March, 1989

In March the RERC met with Curragh to discuss the IEE, and subsequent to this, comments on the IEE were sent to the Company.

July, 1989

On the basis of the comments provided to Curragh, a revised IEE was submitted by Curragh in July.

August, 1989

In August the IEE was declared inadequate by DIAND because the mine plan and the mitigation measures proposed by the company were inadequate to ensure protection of the environment and the compensation proposal pertaining to fish in Vangorda Creek was unacceptable. Curragh predicted in the IEE that Vangorda Creek which is habitat for chinook salmon, would be severely contaminated by metals from acid mine drainage following abandonment. Comments were provided to the company.

October, 1989

In October further comments were provided to Curragh detailing the information deficiencies and the inadequacy of the abandonment plan.

February, 1990

In February Curragh submitted an addendum to the July, 1989 IEE consisting of two reports entitled Fisheries Assessment Study, and Review of Abandonment Alternatives. The mine plan and abandonment mitigation measures remained unchanged from the July IEE.

May, 1990

In May of 1990, comments were submitted to Curragh from the RERC regarding the adequacy of the February addendum and remaining deficiencies.

In May, Curragh submitted an addendum to the IEE which responded to deficiencies identified in October 1989. The mine plan was slightly altered, and mitigation and compensation measures associated with abandonment altered and withdrawn respectively. Late in May a letter was provided by Curragh which clarified statements in the IEE addendum associated with the Vangorda pit wall till cover and operation of a long term treatment plant.

June, 1990

In June additional correspondence from Curragh to DOE which formed part of the final addendum to the IEE further clarified Curragh's commitment to the placement of the till covers and treatment of final effluent as long as required.

D. PROJECT DESCRIPTION

Project

The development by Curragh Resources Incorporated of the Vangorda and the Grum lead-zinc deposits on the Vangorda Plateau near Faro.

Location and Summary Mine Plan

Curragh Resources Incorporated currently owns and operates an open pit mine near the community of Faro in the Yukon Territory. The mine which was previously owned by Cyprus Anvil, was reactivated by Curragh in 1986, and milling of the ore resumed in June of that year. Curragh is preparing to develop additional ore bodies on the Vangorda Plateau located approximately 13 kilometres southeast of the Faro Mine. Development of the Vangorda Plateau deposits, namely Vangorda and Grum, will supplement and eventually replace production from the Faro Pit. The proposed milling rates of the Vangorda and Grum ore bodies would be 11,000 tonnes per day and the proven, open pit mineable reserves are expected to be sufficient for a 13 year project life.

The development of the Vangorda and Grum deposits will produce a total of about 75 million cubic metres (194 million tonnes) of waste material consisting of about 36 million tonnes of glacial till overburden, 149 million tonnes of phyllite, and 9 million tonnes of sulphide waste rock. Based on Curragh's experience at the Faro minesite and their lab testing of the drill core from the Vangorda minesite, it was determined that acid mine drainage will develop from the sulphide-rich waste rock interacting with air and water in the waste dumps and in the exposed pits. The Vangorda pit has the higher potential for acid generation and consequently two separate waste rock cells are planned.

It is recognized that the details of the mine plan may change as the project progresses.

E. ENVIRONMENTAL ISSUES AND MITIGATION

1. Acid Mine Drainage Control

Issues:
- i) Metals, particularly zinc in seepage from Vangorda pit walls, and Vangorda and Grum waste rock dumps
- ii) Long term acid mine drainage (AMD) mitigation
- iii) Commitment to long-term environmental monitoring and protection
- iv) Contingency plans in the event of AMD mitigation failure
- v) Financial security for AMD mitigation

Mitigation:

a. A commitment has been made to maintain water quality in Vangorda Creek such that salmon and salmon habitat in the lower 2 km of the creek will be protected in perpetuity.

b. Cellularized Vangorda waste rock dumps are to be built as outlined in the February 1990, SRK report. Sulphide and phyllite waste rock will be segregated. Till berms will be built around each waste dump. A three metre thick compacted till cover will be placed over the waste dump. Rock drains will be constructed.

c. Grum waste rock dumps will be constructed as outlined in the February, 1990 SRK report. Approximately 4.6 million tonnes of sulphide wastes will be cellularized and segregated. 1.7 million tonnes of sulphide waste will be put back into the Grum pit. Three metre thick compacted till cover will be placed over sulphide waste with 1 metre thick internal till layers.

d. Vangorda pit will be flooded to an elevation of 1,122.5 metres. Pit east of section 12 will be backfilled with waste rock to an elevation of 1,122.5 metres. A further backfill of 2.5 metres of non-acid generating rock will be added to an elevation of 1,125 metres. Pit wall (till) covers will be placed over exposed sulphide rock at a 3:1 slope. This measure will be required unless it can clearly be demonstrated that the pit wall covers are not necessary. If it is demonstrated through seepage monitoring that the untreated pit wall seepage would meet regulatory requirements and contribute little to the metal loads in Vangorda Creek, Curragh will propose an alternate abandonment plan for the pit walls for consideration by the regulatory authorities.

e. Monitoring of all seeps will be carried out to ensure that water requiring treatment is collected and treated.

Area Involved

The minesite is located at the centre of the Vangorda watershed, which drains to the Pelly River. The West Fork of Vangorda Creek drains the west half of the watershed and Vangorda Creek, with Dixon and Shrimp tributaries, drains the east. The Grum pit lies on a gently sloping broad plateau which forms a local drainage divide. The south-facing slope of the plateau sheds run-off directly into Vangorda Creek. The North and West slopes drain to the small tributaries. The waste dumps will be located on a westerly tending ridge which drains partially to Vangorda Creek.

The Vangorda pit is located across the present channel of Vangorda Creek and, as the pit develops, flow in the creek will be diverted through a culvert constructed on a perimeter bench within the pit. Upon abandonment the pit will be flooded. Although a number of potential adverse environmental effects were identified by the company and by reviewers of the project, the key issue is the effect of acid mine drainage on the water quality, fisheries habitat and fisheries resource of Vangorda Creek and the Pelly River, a major salmon river into which Vangorda Creek flows.

Scheduling

Development of the Vangorda Plateau would involve sequential mining of the Vangorda and Grum deposits using the conventional truck-shovel open pit method employed at the Faro Mine. The Vangorda pit, which is the smaller of the two, would be the first to be mined. The Vangorda pit will be relatively small, with a proposed maximum depth of 100 metres. The Grum pit, which contains greater ore reserves and has a greater depth of overburden, will be about 300 metres in depth. Stripping of the two pits started in 1989 with the overburden being used to build the haul road to the Faro mill site. The stripping, overburden removal, and road building took place on mineral claims in accordance with the provisions of the Yukon Quartz Mining Act and the Territorial Lands Act. The work carried out by Curragh in 1989 was done so prior to recent court decisions which clarified and broadened the scope of EARP. Bulk sample ore removal from the Vangorda pit is proposed for 1990 with a 100,000 tonne bulk sample to be taken. Ore removal from the Grum pit would not start until 1992.

f. A water treatment plant will be built and maintained both during and after operations so as to ensure long term treatment of any remaining seepage and runoff from the Vangorda pit walls, Vangorda and Grum waste rock dumps and from any other sources of acid mine drainage. This will assist to ensure protection of downstream water quality, and ensure that discharges to the creek are in compliance with the Fisheries Act. This measure will be required unless it can clearly be demonstrated to the satisfaction of the regulatory agencies that the water treatment plant is not necessary.

g. Additional mitigation and/or more effective long term treatment will be provided if monitoring results indicate it is required to fulfil the overall commitment to maintaining good water quality. The company may implement alternative measures for mitigation as technology becomes available as long as control remains at least as effective, but only with the approval/concurrence of the Yukon Territory Water Board and such other regulatory agencies which may at the relevant time have jurisdiction.

h. Financial commitment by Curragh Resources Inc. in the form of adequate financial security is also required to implement the control measures specified for the mitigation of the impacts of acid mine drainage and other identified impacts. This security must also be adequate for any other mitigation measures proposed by the company or regulatory agency in the event that either technology improves or the mitigation proposed is insufficient to prevent impacts both during operation and after closure.

The major aspects of the abandonment plan to be covered by the security should include, but not necessarily be limited to: cellularization of the dumps and placement of covers on pit walls; construction of permanent structures such as drainage ditches and spillways; treatment of Grum and Vangorda pit waters until water quality is satisfactory; construction and long term operation of a contingency water treatment plant. In addition, an amount shall be included to provide for long term monitoring, maintenance and administration.

2. Fisheries

Issues: i) Downstream water quality impact on fish stocks and habitat
ii) Need to identify Fisheries resources
iii) Commitment to prevent impact on Vangorda Creek and Pelly River fish stocks during life of project and after abandonment

iv) Toxicity of metals, particularly zinc, to chinook salmon and grayling fry

Mitigation:

a. A commitment has been made by Curragh to ensure that the fish habitat of Vangorda Creek will be protected. The protection of Vangorda Creek will ensure the protection of the Pelly River, into which Vangorda Creek flows, from the products of acid mine drainage. Refer to section E.1 of this report for AMD protection measures.

b. Information on fisheries has been made available through studies carried out by Curragh and a significant amount of information has been collected to date. A commitment has been made by Curragh to further study fish abundance, population composition, feeding habits and productivity annually during the first half of the mine plan, and at a lesser frequency as required later.

c. A technical advisory committee which includes government, industry and Yukon First Nations will be struck to look at cooperative research programs on metal toxicity, especially zinc, and aquatic resources in Vangorda Creek.

d. Funding will be provided to the Ross River Band to gather further information on the impact to and use of fisheries resources in the vicinity of the Vangorda Plateau.

3. Wildlife

Issues:
i) Impact on sheep and critical sheep habitat
ii) Commitment to contingency plans in the event that mitigation of impacts on sheep fails
iii) Area furbearer impact
iv) Adequate wildlife data collection and impact analysis
v) Effect of zinc on sheep and moose
vi) Monitoring required to determine disturbance on sheep

Mitigation:

a. Studies and literature review have been carried out to provide the assurance that the health risk to wildlife from zinc is understood and negligible.

b. The water treatment plant has been located away from sheep migration areas.

c. A 500 metre wide migration corridor will be maintained to facilitate passage of sheep through the mine site.

d. Alternative sheep migration routes through the site will be encouraged by baiting with alfalfa as a contingency.

e. Traffic will be controlled while sheep are on or near the haul road.

f. Staff are requested to record sheep sightings and are instructed to avoid disturbance/harassment of sheep.

g. Ore transfer point will be re-established outside of the sheep migration corridor.

h. A joint study was carried out by Curragh and YTG to trap and radio collar sheep with funding for the radio collars and the live sheep traps being provided by Curragh.

i. Studies on hunting and trapping on the Plateau are included in sections F.2 and G.2.

4. Safety/Long Term Stability

Issues: i) Stability of proposed containment structures

Mitigation

a. Curragh has committed to the stability of the design. Pit and waste dump designs are adequate. The mine has been designed for closure. It is imperative that till covers be monitored and maintained over the long-term in order to minimize water flow through acid-generating rock. AMD collector ditch and ponds will be monitored and maintained and an inspection schedule specified.

F. SOCIO-ECONOMIC ISSUES/CONCERNS

Issues:
i) Impact on drinking water quality
ii) Impact on native users rights to fish, hunt and trap
iii) Recreational use impact
iv) Consultation with bands insufficient.
v) Community infra-structure

Mitigation

a. Data in the Curragh Resources/Carefoot Engineering, study entitled " Assessment of the Potential for a Hydraulic Link between Vangorda Creek and the Faro Town Wells" suggest that, under normal conditions, direct hydraulic continuity between Vangorda Creek and the aquifer in which the Town of Faro water wells are completed is unlikely. Monitoring will be carried out to ensure contamination does not occur and that drinking water standards are maintained. Surface water quality is protected through the mitigation measures outlined in this report. Contingency plans will be in place for the protection of Vangorda Creek and the Pelly River in the event of an oil or hazardous material spill.

b. Further information will be gathered on hunting and trapping by and in consultation with the Ross River and Selkirk Bands. Government will assist the Ross River and Selkirk Bands with funding for specific research on the use of the Vangorda Plateau for hunting,trapping and fishing and the impacts of the mine development on the Vangorda Plateau. The Ross River Band will also be a member of the technical committee to examine and direct further research on metal toxicity and aquatic resources. In addition, Curragh has offered to hire a consultant to act as a technical advisor to the bands to assist them in their role on the technical committee.

c. Curragh will ensure that their policy on business opportunities is not framed too narrowly and remains flexible and creative to ensure that preference can be given to the band in respect to business opportunities. Bands will be offered contracts on a preferential basis where possible.

d. Recreational access to the area north-east of the haul road will not be disrupted but the industrial area will be closed to the public for safety reasons.

e. Curragh will discuss mitigation or compensation on a case-by-case basis with anyone whose livelihood is effected or impacted as a result of Curragh's operations.

f. Consultation with local hunters and trappers and wildlife officials has taken place on placement of haul road crossings.

g. Participation by mine staff, local residents and band members will be offered for training programs offered both in-house and off of the mine site.

h. DIAND and Yukon Government will play a role in seeing that the intent of the Employment and Opportunities Accord is achieved.

i. DIAND and Yukon Government will assist in development of training programs to ensure a pool of trained personnel is available for mine closure.

j. There will be little change in the population and infrastructure of Faro because trained personnel from Faro will be drawn from for the Vangorda development as the Faro pit operations draw to a close.

k. In the past, there was insufficient consultation between Curragh and members of the Ross River Band. This was partly due to the urgency of start-up requirements in the years immediately following the purchase of the Faro Mine from Cyprus Anvil and the negotiation of land claims by Yukon First Nations. Curragh is committed to meaningful consultation with the Ross River Band and recent discussions have been fruitful. In addition, consultation by government has been carried out during the environmental review of the Vangorda proposal. Refer to section G.2 of this report for further information on consultation.

G. CONSULTATION

1. Government

For this project the RERC participants included representatives from the Federal Government Departments of DIAND, DOE, and DFO and the Yukon Government Departments of Renewable Resources, Economic Development and Justice (Mine Safety). Federal Justice was also extensively consulted. Concerns raised by RERC members have been addressed through the review process.

2. Native

The Council for Yukon Indians and bands impacted by projects are represented on the RERC. The Bands involved with the review of this project included the Ross River Dena Council and the Selkirk Indian Band.

At the end of the review period the Ross River Dena Council submitted a number of concerns in regards to the adequacy of the environmental review conducted and perceived outstanding deficiencies in the IEE. Reference was made to the recent Sparrow decision by the Supreme Court of Canada relating to aboriginal rights to fish, and as well to the prospective agreement for settlement of the Yukon First Nations Land Claim.

Band concerns in general are as follows:

a. The federal government must act in accordance with the Sparrow decision of the Supreme Court of Canada;

b. Disagreement with the RERC position that the project is one that has known impacts which can be addressed through acceptable mitigation measures with proven technology; they cite the admitted uncertainty about actual impacts, the unproven reliability of the water treatment plant, the synergistic effects of metals on fish, and impacts on the water supply at fish camps;

c. The Vangorda area is noted to be more important as a Ross River trapping and hunting area than the proponent has indicated, and the socio-economic effects of the project are not well-known either by government or the company;

d. Assurance by government of suitable means of enforcement of commitments;

e. The granting of a lease to the company would effectively preclude public access to land and privatize the land, a step which the Dena Council view should be denied until the Council's interests are fairly and properly dealt with; this is a problem which could be resolved through the negotiation of certain rights of access between Curragh and the band.

The department feels that although the requirements under the Umbrella Final Land Claims Agreement and the actions expected of the government in terms of the recent Sparrow decision are not yet fully clear, the department has sought to comply and embrace the concepts underlying in both.

DIAND, DOE, DFO and YTG are satisfied that the mitigation measures and technology proposed by the company are adequate and appropriate to ensure that the potentially adverse environmental impacts do not become significant. Government scientific experts used available information, other government and non-government scientific experts and best judgement in determining if proposed mitigation would work. Regarding uncertainties that may arise with any mitigation required in perpetuity, the combination of mitigation measures using known technology, the financial security requirements for acid mine drainage control and the ongoing monitoring and research program reduce the risk of uncertainties such that the proposal is acceptable.

Curragh Resources has hired consultants which under the supervision and direction of a technical advisory committee will carry out metal toxicity and aquatic resource studies on Vangorda Creek. The technical advisory committee will include Ross River Band representatives. As well, a technical advisor to the bands will be provided under contract by Curragh.

The Government of Canada will assist the Ross River and Selkirk Bands with funding for additional information on the Vangorda Plateau which is to include outstanding wildlife and aboriginal use information as well as the impact of both the present Faro Mine and the proposed Vangorda Mine on the way of life of the aboriginal people in the mine area.

With very few exceptions, the mitigation requirements for this proposal can be enforced under the provisions of the Northern Inland Waters Act for the water licence and the Territorial Lands Act for the Surface Lease. The remaining commitments and requirements of the company are a requirement of the EARP process and will be addressed or enforced as required through agreement between the Government and Curragh.

Curragh is not opposed to access by Ross River band members to the Vangorda Plateau and will be further pursuing requirements with the Band. The basis for the requirement of a surface lease is public safety and certainty of tenure for Curragh.

3. Public

The Yukon Conservation Society and the Town of Faro were sent copies of the Vangorda IEE and were invited to participate in the review of the project. Both parties participated and provided comments to the process.

Curragh Resources held public meetings to introduce the Vangorda Development Plan and the summary of environmental commitments on May 14, in Faro, May 15, in Ross River, and May 16 in Whitehorse. A small number of people were present at each meeting except the Ross River Meeting where no-one attended. Copies of the IEE were also placed in community libraries and advertisements of their availability were placed in the papers.

In order to be certain that all public concerns and interest had been addressed, DIAND conducted public meetings as part of the EARP process on June 12, in Whitehorse and on June 14, in Faro. Advertisements in community papers and on radio notified the public of these meetings. Curragh again presented information on the mine plan at both of these meetings. The primary concerns were raised by members of the Faro community including the possible contamination of Faro's drinking water supply.

A number of points of clarity were raised at the meetings in regard to zinc levels in the creek, how much of the effect is from natural causes and how much is due to Cyprus Anvil and Curragh Resources activities. Concerns were raised as to the reliance of the community and the Territory on the mine and fears of another recession similar to the one which occurred when Cyprus Anvil shut down. Another concern raised by the community was the possible impact of the new development on the community's water supply. The Town manager wanted some assurance that a spill into Vangorda Creek or AMD would not contaminate the water supply. The Mayor of Faro also expressed his support particularly in view of the final mitigation and abandonment plans proposed by the company.

In addition, seven businesses in the Yukon wrote DIAND expressing both support for the Vangorda Plateau Project and concern that there would be a further delay before issuance of a water licence.

H. RECOMMENDATIONS

The RERC recommends that:

1. All mitigation measures relating to water use and discharge be included as a condition of the water licence issued by the Yukon Territory Water Board.

2. When considering the issuance of a surface lease for this project, the mitigation measures relating to land use including those relating to wildlife be included in the terms of the lease.

3. When considering the issuance of any licence or permit for the use of waters and lands on the Vangorda Plateau, the principles of the Comprehensive Land Claim Umbrella Final Agreement and the recent Sparrow Supreme Court case dealing with aboriginal rights to fish should be considered.

4. In view of the importance of the project to the Yukon and the importance of implementation of mitigation as committed to by Curragh Resources Inc. the company should be requested to submit to the Department of Indian Affairs and Northern Development an annual report during the operational phase of the project. The report should address progress on the project and the status of mitigation to the extent that this information is not already requested and provided to regulatory agencies pursuant to regulatory requirements.

5. That a technical committee be formed to study metal toxicity and aquatic resources and that this committee include relevant First Nation's representation, including the Ross River Band, and representatives from government, non-government interest groups and industry.

6. That studies by the Ross River Band be funded to provide further information on aboriginal use of the Vangorda Plateau, Vangorda Creek and Pelly River for fishing, hunting and trapping, on the impact of mining activities, both past and present, on the native users of the plateau, and on the life history of fish populations used by the Ross River Band.

7. That appropriate remedies be provided by Curragh for demonstrated impacts upon members of the Ross River Band associated with Curragh's operation on the Vangorda Plateau.

8. That adequate financial security be provided by Curragh Resources to the Government of Canada prior to issuance of the water licence and surface lease to ensure that the control measures specified for acid mine drainage mitigation and other identified impacts both during mine operation and after closure are implemented (refer to Section E.1.h).

   The security should also be accessible to the Government of Canada should Curragh be unwilling or unable to undertake the mitigation measures required, and should be in a form which requires periodic re-evaluation of the amount of security. As the mine plan contemplates progressive abandonment, the assurance should be provided in installments such that the assurance is sufficient to cover the cost of remaining mitigation requirements in any given year.

9. That the company commits to the protection of the environment through measures designed to reduce the impacts of acid mine drainage. Although the company has committed to specific mitigation measures agreed upon by government, if new technology will allow mitigation which is at least as effective as that already specified, Curragh can request through the appropriate regulatory body, that the mine plan and mitigation requirements are changed. If unpredicted impacts arise as a result of this project, notwithstanding the mitigation measures deemed acceptable to the Government of Canada, Curragh should seek to mitigate these impacts regardless of the specific requirements agreed upon previously.

I. CONCLUSION

The Regional Environmental Review Committee has concluded that Curragh Resources Inc. has submitted adequate information on which to conclude its review. RERC recommends that the Curragh Resources Vangorda Plateau Development proposal meets the requirements of the Environmental Assessment and Review Process Guidelines Order under Section 12(c) as set out below and that the proposal with mitigations as identified in the Initial Environmental Evaluation and this report now proceed to the regulatory process for issuance of the necessary licences, leases and permits.

> Sec. 12.(c) "the potential adverse environmental effects that may be caused by the proposal are insignificant or mitigable with known technology, in which case the case may proceed or proceed with mitigation, as the case may be;"

Pursuant to Section 13 of the Order, the Regional Environmental Review Committee recommends that a public review by an EARP panel is not necessary.

> Sec. 13. "Notwithstanding the determination concerning a proposal made pursuant to Section 12, if public concern about the proposal is such that a public review is desirable, the initiating department shall refer the proposal to the Minister for public review by a panel."

"Panel" means an Environmental Assessment Panel that conducts the public review of the proposal.

Recommended by:

Lois Craig
Chair
Regional Environmental Review Committee

July 20, 1990

REFERENCES

The references used in the review of the Vangorda Plateau proposal were Volumes I, II and III of the Initial Environmental Evaluation (IEE) prepared by Curragh Resources Inc.; addendums to the IEE entitled "Impact Assessment of Fish Resources in Vangorda Creek" by Harder and Associates and "Review of Alternate Abandonment Plans and Water Quality Prediction Methods", by SRK Consulting; the May, 1990 Addendum to the IEE and the two May and June supplemental letters from Curragh Resources which formed the final addendum to the IEE.

The IEE includes information on the following: a description of the project; the mine plan including access and haulage roads, stream crossings, and abandonment; information on both the Vangorda and Grum pits; waste material disposal; waste dumps; waste rock; tailings composition; water management plan; water treatment; baseline environmental conditions including meteorology, aquatic environment, surface water hydrology, surface water monitoring, fisheries resources, thin-horned sheep and baseline socio-economic conditions; proposed abandonment plan; environmental impacts on the aquatic environment, fisheries resources, Town of Faro water supply, sheep, and socio-economic impacts.

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Memo

Deloitte & Touche

Date: July 2, 2002

To: Ken Pearl, Sukhy Hayre, Valerie Chort, Shannon Glenn, Doug Sedgwick, Candace DiCresce
Kristine McPhee, Greg Stevens, Rick Anderson

From: Wes Treleaven

Subject: ANVIL RANGE MINING CORPORATION – "DUTY TO CONSULT"

Derek Ground, counsel for the Ross River Dena/Kaska Nation recently wrote a letter to John Porter, counsel for DIAND and Ken Kraft, counsel for the Interim Receiver, outlining a number of concerns that his client had with regards to our most recent Court Report.

Mr. Ground raises a number of specific points and one of the more important issues centres around the concept of consultation. There have been a number of B.C. cases wherein the First Nation has successfully sued the federal government for failure to consult. When material actions and or reclamation is being proposed on Heritage Land, there is a legal requirement for the federal government to consult.

Recently, Valerie, Shannon and I met with Ken Kraft to discuss this concept and determine whether or not there is the same legal obligation on the part of an Interim Receiver to consult with the First Nations.

As this assignment continues to evolve, we are now becoming involved with several more Acts including the Devolution Transfer Agreement, Water Licence Renewal applications, CEAA etc. All of these acts and regulatory processes have varying degrees of consultation of which we should be aware. Clearly, our role as an Interim Receiver is to report to the Court and to inform and consult with key stakeholders, however, we need not seek their permission for a particular course of action. If ultimately, there is a significant disagreement between the Interim Receiver and other stakeholders, they have a right to attend in Court.

We are dealing with a very sensitive issue in regards to Ross River. They have indicated that they require funding from DIAND to support their participation in the process as it goes forward. I am not sure whether such funding will be available and if not, Ross River has indicated that they will be obstructionist throughout the process.

It is my hope that through regular meetings and the formation of various committees on a go forward basis, we can meet the needs of all stakeholders to ensure that information is appropriately disseminated as we move forward. I do believe we will at certain times reach impasses with various stakeholders and accordingly, after giving due consideration to their concerns and comments, we will make decisions to continue to push this process forward and if necessary, seek the directions and approval of the Court when appropriate.

I thought you would be interested in seeing correspondence we have written in response to Mr. Ground's letter and then Ken Kraft's letter regarding the concept of consultation.

Heenan Blaikie LLP

LAWYERS – PATENT AND TRADE MARK AGENTS

COUNSEL
† The Right Honourable Pierre Elliott Trudeau, P.C., Q.C. (from 1984 to 2000)
The Honourable Donald J. Johnston, P.C., Q.C. (from 1974 to 1996)
Pierre Marc Johnson, F.R.S.C.
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Kenneth D. Kraft
Direct Line 416-643-6822
email: kkraft@heenan.ca
File No. 021558-0001

June 28, 2002

Delivered via Telecopier

Mr. Wes Treleaven
Deloitte & Touche Inc.
181 Bay Street
Suite 1400
Toronto, Ontario M5J 2V1

Dear Wes:

Re: Anvil Range Mining Corporation – Duty of Consultation

Further to our recent meetings, and particularly the June 21, 2002 meeting at our office, you have requested advice with respect to your duty, as interim receiver ("Interim Receiver") of Anvil Range Mining Corporation ("Anvil Range") to "consult" with various stakeholders. Your inquiries related to consultation in varying contexts, including, statutory (e.g. under the *Canadian Environmental Assessment Act)*, contractual (e.g. the Devolution Transfer Agreement), and generally at law. This letter is intended to assist your understanding of a duty to consult.

There is no specific legal definition for "consult". "Consult" can mean to seek information or advice or to take into account or consider the interests of others. "Consult" can also mean to seek permission or approval for a proposed course of action or refer to a person for advice or an opinion. The former definition is a more accurate statement of your obligation to various stakeholders. The latter definition describes, more accurately, your role in dealing with the Court. Before embarking on a particular course of action, you will refer the matter to the Court for approval or, if time does not permit, for ratification.

The law is well settled that an interim receiver is an officer of the Court. An interim receiver is not an agent of any one party. Almost by definition, if a party is not the agent of any other, then it does not require the permission of the other parties to adopt a particular course of action.

However, as an interim receiver, you are duty bound to represent the interests of all stakeholders affected by a decision you may make. This would again imply the former definition of "consult". Before you take any action, you will seek the input and consider the views of those who will face the impact of a particular course of action. Additionally, as an interim receiver, you have the ability, where there are conflicting courses of action, to seek the advice and direction of the Court as to which route should be followed (which is the second type of "consultation"). It would not be, should your actions be challenged, a defence to simply say you followed a particular course of action because you had to rely on what that party said. As an interim receiver you are required to exercise independent judgement in reaching conclusions.

None of the statues or agreements to which you have asked us to refer, nor the case law, go into any great detail as to what is involved with consultation. However statutes and contracts typically distinguish between "consultation" and "approval". This implies that the duty is to seek information and take account or consider other's interests but not to seek their permission for a particular course of action.

We trust the foregoing satisfactorily answers your queries in this regard. If you would like to discuss this further, please do not hesitate to contact us.

Yours truly,

Kenneth D. Kraft
KDK/mds

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5 JUNE 2002

BY FAX

Ken Krafi
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And

John Porter
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Toronto, Ontario M5H 3T4

Dear Sirs:

RE: ANVIL RANGE MINING CORPORATION

I write further to the receipt of the Twenty Eighth Report of the Interim Receiver (the "Report"), our conversations concerning same of 22 May 2002 and to Mr Treleaven's recent meeting with my clients and others in the Yukon.

I understand that several issues emerged from the meeting, and I will deal with those first, as they are more "global" than my specific concerns with the Report.

As you are aware, this matter has reached the stage where my clients will require more active involvement, particularly as – if the tone of the recent Interim Receiver's reports are any indication – we seem to be moving towards a final closure plan, albeit in seemingly tentative steps.

My clients claim the land on which the Faro Mine is situate as comprising part of their traditional territory. The status and future of the mine site comprises a significant aspect of current and on-going Comprehensive Land Claims negotiations involving, *inter alia*, the Ross River Dena/Kaska Nation's rights to certain lands including those comprising the Faro property. In fact, several of the specific issues that I will deal with herein are also aspects of those negotiations. .../2

DEREK T. GROUND, *Barrister & Solicitor*

WORK FOR ROSS RIVER/KASKA MEMBERS

There has been some effort n the part of the Interim Receiver to ensure that local personnel will be utilized on certain projects "where practicable". These assurances are both too vague on their face and too unreliable in practice. We believe that there should be specific provisions guaranteeing Kaska inclusion on contracts relating to work on the mine site.

Part of the reason for our insistence on this is that it is consistent with the Department of Indian Affairs and Northern Development's (DIAND's) focus on capacity building; the greater number and variety of projects on which Ross River/Kaska personnel are utilized, the greater the capacity to move forward with the development of expertise in those areas.

Another reason for our insistence on this is that it is standard practice, particularly in Canada's north in areas where a First Nation is directly affected by resource development. As you may recall, there was some attempt at this sort of thing in the Socio-Economic Benefits Agreement put together by Anvil Range at the outset of its venture, but the company never made good on its obligations the Ross River people. There was also language to deal with this in the now-defunct Memorandum of Understanding.

As, however, we are beginning to get into what appear to be reclamation projects, it is imperative that the Ross River Kaska have guaranteed involvement.

SOCIO-ECONOMIC STUDY

Consistent with the foregoing is, we believe, the necessity of doing a socio-economic study on what the reclamation of the mine will mean for the Ross River Kaska people and for the Yukon as a whole.

As you will recall, the Court has found that the socio-economic significance of the mine cannot be overlooked or, indeed, diminished, in these proceedings.

The Ross River Kaska have always believed, and continue to believe, that the closure of the mine must be seized as an opportunity. The opportunity, however, must be pursued with caution and sensitivity. In order to proceed in such a fashion it is, we believe, necessary to commence a study now, and to develop a terms of reference for such a study in consultation with Ross River and with other stakeholders.

Again, this is consistent with what is becoming standard practice, particularly in the North.

.../3

DEREK T. GROUND, *Barrister & Solicitor*

The legal requirement of consultation certainly recognizes that Aboriginal peoples asserting a claim to the affected land (or simply living nearby) are something more than just one of several "interested stakeholders". They are of a different, *sui generis* category and should correspondingly be treated as such. As well, the degree and nature of consultation required is of a higher order, as the interests at stake are be greater.

The meetings with regard to the process(es) outlined in the afore-mentioned paragraphs should have involved Ross River and/or their representatives (or, at least, there should have been an invitation to attend) and the consultation required is considerably more than either the "update" proposed above or, as the Report suggests, stakeholder input during the CEAA process.

Indeed, paragraphs 29, 36, 37 and 73 outline many issues which one would think would be precisely the sorts of things on which it was, is and will be necessary and proper both legally and morally to consult Ross River.

The Interim Receiver, as an officer of the Court, cannot – we submit – continue to proceed as we believe has been done thus far: in a fashion that ignores the obligation to meaningfully consult the Ross River Kaska on issues that will have an impact on closure and the long-term integrity of the site.

This is particularly true in a situation where DIAND, as my client's direct fiduciary, is all of the main funder, the largest (contingent) creditor, environmental regulator and proponent of some of the projects. We are very surprised that no-one from DIAND has seen fit to bring this issue to the attention of the Interim Receiver or indeed to intervene to ensure that proper consultations take place. If they have, we are certainly unaware of it.

We can inform you now that we do not believe that the August "public meeting" contemplated for Ross River will satisfy either the Interim Receiver's or DIAND's consultative obligation.

As has been stated on numerous occasions in the past, the Ross River Kaska Dena anticipate being key participants in the development of the long-term closure plan(s) for the Mine. It would appear from some of the language in the Report that those plans are already being formulated.

Ross River needs and demands involvement immediately to ensure that those short and long-term plans are consistent with its visions and requirements, and the needs of its community.

We would be pleased to discuss with you the sorts of steps that we believe need to be undertaken to properly consult the Ross River Kaska Dena Community.

SPECIFIC KASKA PROJECTS

The Report outlines a number of projects to be undertaken over the next year or so, many of which we believe would be ideal for Ross River Kaska participation in some form or other. .../5

These include those projects mentioned at paragraphs 45, 50, 51, 55, 60, 73, 74, 75 and 83.

We look forward to hearing from you concerning your intentions regarding those projects.

DEVOLUTION

Finally, we wish to endorse your comments with respect to the Devolution issue, as far as they go. As you can doubtless imagine, the Ross River Kaska share these concerns and more. We would request some involvement in your discussions with YTG and DIAND concerning this and, at a bare minimum, would ask that we be kept apprised of the status of these discussions beyond what ever reports will issue to the Court as a result of them.

CONCLUSION

We trust that you will understand the necessity of bringing the above-noted concerns to your attention at this juncture.

We look forward to continuing to work with both your clients with respect to these and other issues.

Yours very truly,

Derek T. Ground

c.: Ross River Dena Council
Tom Potter, Solicitor for YTG
Edward Sellers/Fred Myers, solicitors for YTG (Toronto)
Wes Treleaven, Interim Receiver (Deloitte & Touche)
(all by fax)

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Deloitte & Touche

June 25, 2002

Ken Kraft
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Dear Ken:

RE: ANVIL RANGE MINING CORPORATION ("ANVIL RANGE")

Derek Ground recently wrote to you and John Porter on behalf of his client DIAND in which he set out a number of concerns. Mr. Ground also addressed the Court on June 7th regarding the same issues.

We have discussed the issues raised and you have requested that we write to you setting out background information and facts to assist you in responding to Mr. Ground's letter.

Each year, we have encouraged DIAND to provide funding for special reclamation projects where First Nations can benefit through training programs and on site work. During the operating seasons of 1999 and 2000, steel reclamation projects were carried out and in 2001, repairs to the Vangorda flume were completed. For each of these projects, a number of residents from Ross River were employed and we have provided correspondence outlining the socio economic benefits that were derived from these projects.

Also, during the winter of 2001/2002, we retained Tim Moon Construction Ltd. of Ross River to complete reclamation work on the Rose Creek diversionary ditch and Mr. Moon employed residents of Ross River to work with him on this particular contract.

The Interim Receiver has been very fortunate in maintaining a stable work force, mainly from the Town of Faro. We have in the past attempted to hire individuals from Ross River and have encouraged contractors on a number of occasions to post job opportunities and hire local Ross River residents to work on their individual projects. On some occasions, employment opportunities have been filled, however, on many occasions, applicants have not come forth to fill the opportunities.

In planning for this season's operations, the Interim Receiver recognized that it had to hire additional staff on account of the start up of the Vangorda water treatment program. This is the first year wherein water is being treated from the Vangorda Pit. To be as fair and equitable as possible to the local communities, job opportunities were posted in Ross River for full-time positions at the mine site to work on the water treatment programs. Sixteen applications were received and on the day of interviews, ten applicants came

forth. We have hired four individuals on a full time basis and I am pleased to report that they are performing well in carrying out their assigned tasks.

We were particularly pleased with Mr. Moon's work this past winter and have entered into negotiations with T. Moon Construction Ltd. to continue to do significant work at the mine site this year. I'll be addressing specific contract items in relation to paragraphs that Mr. Ground points out in his letter. More importantly, we have and will continue to provide opportunities to local personnel from both Faro and Ross River for ongoing work and special projects. We will also continue to encourage all contractors to utilize the services of persons within the local communities particularly, First Nations. For example, we have just recently sent a request for proposals to engineering firms to complete the design and build of a slot cut to lower the freshwater dam spillway. As part of the overall information package, we have stated as follows:

> *"Deloitte & Touche Inc. seeks to proactively assist in developing the capabilities of local and First Nations contractors and therefore will be entering into a separate contract with T. Moon Construction Ltd. of Ross River, Yukon, to carry out a portion of the above work. T. Moon Construction Ltd. will develop access to the riprap borrow area, re-open the borrow area, then drill, blast, excavate, process, load and haul to a stockpile(s) near the FWS dam, all of the riprap required for the construction. Specifications for the riprap are to be provided by the Design-Builder as part of the construction documents. The Design-Builder will be responsible for loading the riprap from the stockpile, hauling and placing the riprap and/or construction and placing other erosion and protection measures."*

This year, over and above the project noted above, T. Moon Construction Ltd. will have involvement in two other significant ongoing site projects and it is our understanding that Mr. Moon will be hiring individuals mainly from Ross River and possibly Watson Lake.

On page 2, Mr. Ground's last paragraph under work for Ross River/Kaska members, he states, *"what appear to be reclamation projects"*. I wish to emphasize that the Interim Receiver has and will not start any major reclamation projects on the site, without proper regulatory approval. As you are aware, we have submitted an application to renew the water licences for the Faro and Vangorda properties, which will expire December 2003. In the Project Description, which we have outlined to members of Ross River and to whom we have provided copies, we are proposing that over the next three years, appropriate studies will be completed providing the foundation on which a final closure and abandonment plan can be filed with the Yukon Territory Water Board. Details regarding this will be discussed at the TAC meeting to be held July 17th and at public meetings which are scheduled for August 21st, 22nd and 23rd. I will be attending the public meeting on the evening of Thursday, August 22nd in Ross River. Not until there is a final Closure and Abandonment Plan approved by all of the regulatory authorities, can large-scale reclamation projects take place.

Reclamation Projects that are ongoing are of an emergency nature to ensure the safety of the property and minimize risk to the surrounding environment.

As noted in our most recent Court Report, a workshop was held in mid April in Vancouver and the participants selected for the workshop were proponents of the project. The proponents included both the Interim Receiver and DIAND and in addition, other engineering consultants with either specific expertise in key aspects relating to mine closure and /or experience at the mine were in attendance. There were a

number of objectives for the workshop and as part of the output, a listing of comprehensive studies, which will be required to develop and complete the Closure and Abandonment Plan was prepared. One very important study will be a socio economic study. It is in our plans to further advance the past socio economic studies, several of which have been completed for this site and do this work next year.

On page 4 of Mr. Ground's letter, he raises a number of concerns regarding consultation and in particular, he has indicated that the August "public meeting" contemplated for Ross River will not satisfy what he deems to be appropriate consultative obligations. The August public meeting is called by CEAA for purposes to review the water licence application and is not to discuss the reclamation plans or proposed projects.

During my recent meeting with the community members of Ross River, a great deal of information was exchanged. I made a number of notes, as it was requested by those attending that the Interim Receiver include in its next report, a number of statements, which were raised during the meeting. A very important issue raised was that Ross River is requesting that funding be made available to them so that they can actively participate in the process. During the meeting, I undertook to write to DIAND to raise this issue and ask if such funding could be made available and I have written to DIAND in this regard. To date, I have not received a response.

A very key member of the TAC committee is the community of Ross River. The TAC meeting is held each year in July and members are advised well in advance of the planned scheduled date. In 1999 and in 2000, members of Ross River did not attend the TAC meeting held in Faro. In 2001, we wrote to Ross River and Mr. Ground, emphasizing the importance to have representatives attend this meeting and last year a number of members from Ross River attended. At the end of the meeting, I was asked if the elders of Ross River could attend at the site and have a tour. Following the TAC meeting, we made several attempts to arrange for such a tour and no replies were received to our calls. Only at the end of October did we receive a call asking for a tour and unfortunately by this time, the mine had been closed for the winter and the ground was covered in snow. There was little sense in having a tour at that time. During my meeting on May 25th, I again extended an invitation to the council to attend and tour the site and they have agreed to such a tour, which will be held on Friday, June 28th.

We believe that to date, we have made appropriate efforts to keep the community of Ross River fully informed of our administration by way of Court Reports, community meetings and the opportunity to attend the TAC meetings.

At the bottom of page 4, Mr. Ground also states that there are a number of projects that would be ideally suited for Ross River/Kaska participation and has specifically listed paragraphs 45, 50, 51, 55, 60, 73, 74, 75 and 83. I will comment in the same chronological order as these paragraphs are listed.

Paragraph 45 – This paragraph deals with the lowering of the freshwater spillway to relieve pressure on the freshwater dam and the low level pipe. Request for proposals for design and build have been sent to four engineering firms, one of which is SNC Lavalin (who have formed a partnership with the Kaska First Nation), who attended at the mine site on Friday, June 21st. As noted above, we have also advised the potential bidders that it is our intention to provide T. Moon Construction Ltd. of Ross River, a portion of the contract dealing with the production of the required riprap. This is a significant component to the overall contract and therefore, a significant benefit will flow to the community of Ross River through this particular project.

Paragraph 50 - The cross-valley dam requires minor refurbishment, including grading to the topside and filling certain surface cracks with an estimated cost of $25,000. We have spoken to Mr. Tim Moon again about completing this small project which will require a D3 or D4 bulldozer. I anticipate that we will be able to finalize arrangements with Mr. Moon to complete this work, which should take two days.

Paragraph 51 – This paragraph outlines requirements to install support structures under two culverts at the end of the freshwater dam spillway. This particular project will be carried out by site personnel who are licensed equipment operators and welders. It is anticipated that the project will take no more than a day and is relatively small in nature.

Paragraph 55 – This paragraph outlines the rehabilitation of the Faro Creek flume and is the largest project to be undertaken at the mine site this year. We have had ongoing meetings with T. Moon Construction Ltd. of Ross River and we have agreed that Mr. Moon will be responsible to carry out this project, which will have a substantial labour component. We understand that up to 10 individuals will be hired from Ross River and be fully employed for a period of 6 to 8 weeks to complete this particular project.

Paragraph 60 – This paragraph deals with excavating and lining a ditch around a containment cell holding the diesel fuel storage tank near the Faro mill. It is our plan to have onsite personnel complete this as part of normal site maintenance work as it is included in our overall site maintenance budget.

Paragraph 73- This paragraph deals with a study on the possible relocation of the Faro Creek diversion flume. As described in our most recent Court Report, there is concern about the stability of the northeast section of the Faro pit wall. As this wall continues to deteriorate and erode, it brings into question whether or not an event could occur in the future, whereby water from the diversion creek would actually flow directly into the pit. The present pump and treat system would not be capable of handling the entire inflow of water and therefore, we have determined that it is necessary to investigate the potential relocation of the flume. This particular project is one of an engineering assessment design and will be put out for tender to engineering firms who have the skill sets to investigate and report on the potential cost to relocate this diversionary ditch.

Paragraph 74 – This paragraph deals with the production of additional riprap, which is required at the site, and I am pleased to report that this contract was awarded to T. Moon Construction and he is currently carrying out this work utilizing Ross River personnel.

Paragraph 75 – This paragraph deals with the building of an additional riprap screen. This work will require welding and design skills and will be completed by site personnel.

Paragraph 78 – While Mr. Ground did not raise paragraph 78, which deals with the demolition of the core storage buildings, I wish to report that this project was again contracted with T. Moon Construction Ltd. and the work has been completed utilizing Ross River personnel.

Paragraph 83 – This paragraph deals with the potential abandonment of various building structures on the property. As a result of the Vancouver workshop, where various needs were prioritized, we concluded that this particular project should be deferred and that the funding be utilized for specific engineering studies, which will be conducted and carried out this summer.

As noted, the majority of the paragraphs identified by Mr. Ground, we are in fact having Tim Moon with residents of Ross River complete this work. As noted, we are very pleased with Mr. Moon's perfonnance. He is very dedicated and reliable and has made a commitment to us that he will hire residents of Ross River to work with him in carrying out these projects. Therefore, during the current operating season, we see a significant direct benefit relating to the water treatment operations, flowing to the community of Ross River through the hiring of permanent personnel and through contracting with Mr. Tim Moon for some of the individual projects. In addition, there have been appropriate training programs carried out.

We will continue to make sincere efforts to involve residents of Ross River at the mine site and will encourage the community of Ross River to attend public meetings, TAC meetings and other meetings whenever called to ensure that they are fully informed on the progress and processes that are being put in place.

Yours very truly,
DELOITTE & TOUCHE INC
in its capacity as Interim Receiver of
ANVIL RANGE MINING CORP.

Per:

Wes A. Treleaven, CA, CIRP
Senior Vice-President

Heenan Blaikie LLP

LAWYERS - PATENT AND TRADE MARK AGENTS

COUNSEL
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The Honourable Donald J. Johnston, P.C., Q.C. (from 1974 to 1996)
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July 2, 2002

Delivered via Telecopier 416-604-3596

Mr. Derek T. Ground
296 Durie Street
Toronto, ON M6S 3G3

Dear Mr. Ground:

Re: Anvil Range Mining Corporation

Your June 5, 2002 letter, and submissions at our subsequent attendance before Greer J. on June 7, 2002, raised various issues with respect to the 28th Report of Deloitte & Touche Inc., in its capacity as interim receiver (the "Interim Receiver") of Anvil Range Mining Corporation ("Anvil Range"), and Mr. Treleaven's meetings with your clients and others in the Yukon last month. Your letter raises both general issues as well as specific concerns with respect to matters dealt with in the 28th Report. I will respond, for ease of reference, in the same order as the matters are set out in your letter.

As a preliminary matter, the Interim Receiver acknowledges that your clients are important stakeholders with respect to the future of the Faro Mine site. As your own letter notes, the Ross River Dena/Kaska nation's rights to the lands are also aspects of other negotiations involving your clients. Of course, the Interim Receiver is not party to such negotiations.

On the question of work for Ross River/Kaska members, we believe that specific provisions guaranteeing Kaska inclusion on contracts relating to mine site work are not required. The Interim Receiver has consistently recognized the need to provide employment to the local communities, including residents of both Ross River and Faro. Attached is a copy of Mr. Treleaven's letter to me which details many projects for which your clients have been and will be involved in going forward.

Since its original appointment, the Interim Receiver has participated in employment training programs for your clients with Indian and Northern Affairs Canada ("INAC") and will continue to do so to the extent INAC makes funding available. The Interim Receiver recognizes that these programs provide important training opportunities to the local First Nations and,

ultimately, will allow those individuals to have greater capacity to work on other projects at the mine site in the years to come.

The Interim Receiver does not agree that it has not consulted with Ross River. In fact, the Interim Receiver has on virtually every trip to the north, made itself available for meetings with your clients. On occasion, as Mr. Treleaven's letter notes, they have declined to meet with the Interim Receiver. Furthermore, the Interim Receiver has constantly been available and willing to discuss matters directly with any interested stakeholders. Many have taken the opportunity to speak to the Interim Receiver directly. All that is required is a telephone call.

While we do not necessarily accept the proposition that there is a constitutional obligation on the Interim Receiver to consult with your clients, we believe this is a moot point. The Interim Receiver has in fact consulted, and in the future will continue to consult, with your clients. If you would like a specific formal mechanism to accomplish this, we are open to suggestions in this regard. Additionally, as an interim receiver operating under court supervision, there must be regard to the interests of all affected parties, including your clients.

As the Interim Receiver works toward developing a final closure and reclamation plan, your clients will be directly involved. This is not only an involvement to which they are entitled at law, whether by statute or by other legal rights which your clients may possess, it is a reflection of socio-economic reality that the Interim Receiver recognizes. Long-term plans for closure of the mine have not been formulated. What has been formulated is a need to renew the water licenses, which expire at the end of next year. This is, in itself, a process that can last, we understand, 18 to 24 months. Your clients will be involved in both the water license process and in developing the closure and reclamation plan.

In conclusion, please note that consultation does not, in our view, imply the ability to dictate a particular course of action. The Interim Receiver, as an officer of the Court, is independent of all parties, be it the First Nations, the federal or territorial government. While the Interim Receiver understands that there is a high level of sensitivity as to the "rights" of the various stakeholders, we do not accept that those concerns can cause the Interim Receiver, an independent court-supervised officer, to follow the dictates of any one party, nor are we convinced that precedents from other situations are directly applicable to the rather unique facts of this case.

Yours truly,

Ken Kraft/mds

Kenneth D. Kraft
KDK/mds
c: Wes Treleaven, Ken Pearl
John Porter
Tom Porter

Heenan Blaikie LLP

LAWYERS - PATENT AND TRADE MARK AGENTS

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September 18, 2002

Deloitte & Touche Inc.
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Attention: Wesley Treleaven
Shannon Glenn

Dear Sirs:

Re: Anvil Range Mine Complex
Water License Renewal
Possible CEAA Exemption

You have asked our advice with respect to the proper interpretation and application of the *Canadian Environmental Assessment Act* (the "CEAA") with a view to considering the scope of any potential environmental assessment screening in respect of the upcoming water license renewal applications for the Anvil Range Mine Complex ("Anvil Range"). In view of the expiry of the existing licences next year, it is essential that any environmental assessment screening be completed expeditiously. At the same time, the process of preparing an Integrated Closure and Abandonment Plan continues, and cannot practically be completed prior to the expiry of the existing licences, so it is essential that consideration of the water licence renewals and several new operational features proposed as part of the water licence renewals be separated from closure planning considerations. You have requested our assistance in putting forward persuasive arguments for limiting the scope of any environmental screening so that the water licence renewals can be renewed before they expire.

This letter will set forth three arguments, which we believe are supported by relevant authorities, as follows:

1. The water licence renewals are entirely exempt from environmental assessment, since the proposed operations are the same as operations that were previously subject to environmental assessment;

2. Alternatively, if there is to be an environmental assessment, the scope of the project to be assessed should be limited to new features proposed in the Project Description and/or the operations for which the water licences are to be renewed, and should not include closure planning, because those new features and the water licence renewals are not interdependent with or inevitably linked to closure planning; and

3. Closure Planning should be the subject of a separate environmental assessment screening, because to include it in the scope of any environmental assessment screening in respect of the new features or the water licence renewals would cause delay.

Legislative Provisions

Section 5(1) of the CEAA outlines the "triggers" for environmental assessment. It provides that

> *"An environmental assessment of a project is required before a federal authority exercises one of the following powers or performs one of the following duties or functions in respect of a project, namely, where a federal authority:*
>
> *(a) is the proponent of the project and does any act or thing that commits the federal authority to carrying out the project in whole or in part;*
>
> *(b) makes or authorizes payments or provides a guarantee for a loan or any other form of financial assistance to the proponent for the purpose of enabling the project to be carried out in whole or in part, except where the financial assistance is in the form of any reduction, avoidance, deferral, removal, refund, remission or other form of relief from the payment of any tax, duty or impost imposed under any Act of Parliament, unless that financial assistance is provided for the purpose of enabling an individual project specifically named in the Act, regulation or order that provides the relief to be carried out;*
>
> *(c) has the administration of federal lands and sells, leases or otherwise disposes of those lands or any interests in those lands, or transfers the administration and control of those lands or interests to Her Majesty in right of a province, for the purpose of enabling the project to be carried out in whole or in part; or*
>
> *(d) under a provision prescribed pursuant to paragraph 59(f), issues a permit or licence, grants an approval or takes any other action for the purpose of enabling the project to be carried out in whole or in part.*

It should be noted that the introductory language of Subsection 5(1) refers to the environmental assessment *of a project* and that powers or functions set out in Subsection 5(1) (a) through (d) are exercised or performed "*in respect of a project*".

In section 2(1) of the Act, "*project*" is defined as follows:

> *"Project" means*
>
> *(a) In relation to a physical work, any proposed construction, operation, modification, decommissioning, abandonment or other undertaking in relation to that physical work, or*
>
> *(b) Any proposed physical activity not relating to a physical work that is prescribed or is within a class of physical activities that is prescribed pursuant to regulations made under paragraph 59(b).*

The Inclusion List Regulations prescribed pursuant to paragraph 59(b) of the Act include water licence renewals pursuant to the *Yukon Waters Act*. Section 68 of the Schedule to the Inclusion List Regulations prescribe "physical activities relating to the use of waters or the deposit of waste that require a licence under subsection 14(1) of the *Yukon Waters Act* or that are the subject of a renewal of or amendment to a licence under paragraph 18(1)(a) or (b), or physical activities relating to a cancellation of a licence under paragraph 18(1)(c) of that Act". Thus, the trigger for environmental assessment of the water licence renewals would seem to be that they are "projects" (as that term is defined) due to the regulations under sub-paragraph (b) of the definition of "project".

The Exclusion List Regulations Exempt the Water Licence Renewal because an Environmental Assessment was Previously Conducted

Section 3 of the Exclusion List Regulations promulgated pursuant to sub-paragraph 59(c)(2) of the Act provide that

"The projects and classes of projects that are set out in Schedule I and carried out in places other than a national park, national park reserve, national historic site or historic canal are prescribed projects and classes of projects for which an environmental assessment is not required".

Schedule I of the *Exclusion List Regulations*, section 2, includes the following:

> *2. The proposed operation of an existing physical work that is the same as an operation for which an environmental assessment has been previously conducted under either the Canadian Environmental Assessment Act or the Environmental Assessment Review Process Guidelines Order where:*

a) as a result of the assessment, the environmental effects have been determined to be insignificant, taking into account the implementation of mitigation measures, if any; and

b) the mitigation measures and follow-up program, if any, have been substantially implemented.

The purpose behind the Exclusion in Section 2 of Schedule I is obviously to avoid duplication of previous environmental assessment screenings. In light of that purpose, pursuant to the Exclusion List Regulations the water licence renewals ought to be exempt because environmental assessments were previously conducted.

The most recent screenings occurred in July of 1990 for the development of the Vangorda Plateau site (water license IN89-002) and in November of 1996 for the Faro site pursuant to an amendment of the water license IN89-001 (now QZ95-003).

We have reviewed the previous screenings in respect of the water licence applications in question. In respect of Faro, these included such issues as the recommended diversion of Faro Creek in the Faro pit, the proposed Faro pit dam, monitoring programs, the submission of an integrated comprehensive abandonment plan, post reclamation security and cumulative environmental effects. With respect of Van Gorda, the screening include issues such as water quality in Van Gorda Creek, the protection of salmon and salmon habitat, waste rock dumps, the flooding of the Van Gorda pit, wildlife impacts, including impacts on sheep and sheep habitat, safety, long term stability, socio-economic issues, impact on drinking water quality, concerns relating to native users' rights to fish, hunt and trap, as well as recreational use impact.

It is clear in light of these topics of the previous environmental assessment screenings that they can be characterized as broad ranging assessments of potential environmental impacts at the sites.

We understand, however, that it has been suggested that the previous environmental assessments were inadequate. To the extent a responsible authority has discretion to determine the adequacy of the previous assessment in determining whether or not a new environmental assessment was required, it would be extremely difficult to argue against such a determination. Where discretion is given to a responsible authority, it will not be interfered with unless the decision resulting from the exercise of such discretion does not meet the standard of "reasonableness", and it would be very difficult to establish that the responsible authority exercised its discretion unreasonably if it were to exercise discretion to require a new environmental assessment. Environmental standards change over time, as do cumulative impacts. In addition, the conditions present at the time of previous environmental assessments will always be different, in light of the passage of time.

However, it does not appear to us that the Exclusion List Regulations give any kind of discretion to a responsible authority to determine whether the previous environmental assessment was adequate and whether a new environmental assessment can be required. The Exclusion List Regulations say plainly and clearly that if the proposed operation of an existing physical work is

the same as the operation for which an environmental assessment was previously conducted, no environmental assessment is required.

In respect of the proper interpretation of the provisions of the Act and its regulations, responsible authorities do not have any discretion. The appropriate standard of review by a Court is correctness.

The test to be applied in considering whether the water licence renewals are excluded from environmental assessment pursuant to section 2 of Schedule I of the Exclusion List Regulations is whether the proposed operation of an existing physical work is the same as the operation for which an environmental assessment was previously conducted. This is a question of fact involving a comparison of the proposed operation to the previously approved one.

The Project Description indicates priorities to be carried out during the timeframe of the new licences which include, as a first priority, to continue the care, maintenance and protection of the property and the environment. While the Project Description discusses the repair and upgrading of various components of the system, for the most part it involves the continuation of previous basic requirements.

Certain items listed in Section 2.1.3 of the Project Description are stated to require changes to the water licence terms. These include a new landfill operated to current design standards, removal of unnecessary buildings, the design of a bio-remediation cell and the consolidation of piles of fines. Even with these features, which are acknowledged to require changes to the licence, we believe there is support in decided cases for the position that the proposed operation of the physical work is "the same" as the one for which an environmental assessment screening was previously conducted, within the meaning of section 2 of Schedule I of the Exclusion List Regulations.

Hamilton-Wentworth (Regional Municipality) v. Canada (Minister of the Environment), a 2001 Federal Court of Appeal decision,[1] is authority for taking a liberal view of "sameness" in determining whether a project is the same as one for which an environmental assessment was previously carried out. The *Hamilton-Wentworth* case was decided under Subsection 74(4) of the CEAA, the transitional provisions of the Act. Subection 74(4) provides as follows:

> *74(4). Where the construction or operation of a physical work or the carrying out of a physical activity was initiated before June 22, 1984, this Act shall not apply in respect of the issuance or renewal of a licence, permit, approval or other action under a prescribed provision in respect of the project unless the issuance or renewal entails a modification, decommissioning, abandonment or other alteration to the project, in whole or in part.*

This test is not worded in precisely identical fashion to the "sameness" test provided for in section 2 of Schedule I of the Exclusion List Regulations. However, although different words are used, the essence of the inquiry is identical.

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[1] [2001] F.C.J. No. 1700 (Richard, C.J. and Linden and Evans JJ.A.) (hereinafter "*Hamilton-Wentworth*") at paras. 6 and 7.

In *Hamilton-Wentworth*, the Federal Court of Appeal held that not all changes to a project that has been previously assessed amount to a modification or other alteration to the project in whole or in part so as to bring the project back into the CEAA. The Red Hill Creek Expressway was the project in issue. It had been studied since the 1950's and assessed earlier under the Ontario Environmental Assessment Act. Over the years, certain changes had been made to the project. Specifically, there had been numerous route realignments, fewer crossings were to be ultimately constructed than had been earlier proposed and a natural channel design for creek crossings had been added. It was determined that the changes were of such a "minor significance in relation to the project as a whole" that they did not constitute a modification or alteration to the projects. Second, the Court considered the fact that that these changes were made, in part, to mitigate the impact of the expressway upon the natural environment and would, in fact, be mitigating measures. For the foregoing reasons, it was held that the changes to the project did not constitute modifications or alterations for the purposes of s.74(4) of the CEAA.

Thus, there is judicial support for the position that the changes included in the Project Description do not amount to modifications or alterations to the operation of the existing physical works, and that the proposed operation is "the same" as the operation previously assessed. The focus of the inquiry should be on "the operation", and not necessarily on the new features included in the Project Description. If the operation proposed is to be the same as the operation in place during the previous assessments, or if any changes are minor compared to the project as a whole, do not result in an environmental impact that exceeds previously determined permissible standards, and/or are mitigating measures, the water licence renewals may be exempt from environmental assessment.

It has also been suggested that closure planning should be part of the environmental assessment in connection with any water licence renewals. However, that presumes that there is authority for conducting an environmental assessment in connection with the renewal of the water licences. For the reasons outlined previously, the renewals may be exempt from environmental assessment pursuant to the Exclusion List Regulations.

It should be acknowledged that it may be possible for DIAND to interpret the Exclusion List Regulations differently so that the water licence renewals are not exempt. In particular, section 2 of Schedule I could be interpreted narrowly, so as only to apply to projects that are "physical works".

"Physical work" is not a defined term in the legislation, nor has it been explicitly defined in any cases of which we are aware. However, the sorts of things that have been considered a "physical work" in the cases includes such physical structures as bridges and roads. Indeed, this would seem to be consistent with the ordinary meaning of the term "physical works".

As set out above, the definition of "project" has two distinct branches -- (a) in relation to physical works, and (b) physical activities listed in regulations for which environmental assessments are required. The water licence renewals trigger environmental assessments by virtue of the Inclusion List Regulations, which fall under the (b) part of the definition. Thus, it could be argued that the exclusion in section 2 of Schedule I of the Exclusion List Regulations, in using

the term "physical work", was intended to refer only to projects which fall under the (a) part of the definition of "project". As a result, the water licence renewals would not be exempt.

While such an interpretation is feasible, it is a semantic argument that on balance should not be appealing to a Court. For one thing, it can be noted that section 2 of Schedule I of the Exclusion List Regulations does not use language identical to the definition of project -- rather, it refers to a "proposed operation of an existing physical work". While not determinative, this use of different terminology does suggest that something different is contemplated. More importantly, however, this narrow interpretation is not in accordance with the general purpose of section 2 of Schedule I of the Exclusion List Regulations, which is obviously to avoid reinventing the wheel and duplicating previous environmental assessments.

Alternatively, the Scope of the Assessment Should Be Limited to the New Features Outlined in the Project Description

In the event that DIAND is determined to proceed with an environmental assessment, an alternative position can be advanced that only the new aspects of the Project Description (the new landfill, the destruction of buildings, the bio-remediation cells and the consolidation of piles of fines) should be subject to environmental assessment screening.

The Responsible Authority's Guide published by the Canadian Environmental Assessment Agency provides that once the potential responsible authority has determined that the Act applies, its next step is to determine the scope of the project for which an environmental assessment is being considered. The Guide provides as follows:

> *Scope of the Project*
>
> *Under the Act, the RA must determine the scope of the project in a screening or comprehensive study. The scope of the project refers to those components of the proposed development that should be considered part of the project for the purposes of the EA.*
>
> *In determining the scope of the project, therefore, the RA must consider:*
>
> • *which physical works fall within the scope of the project, and which undertakings in relation to those physical works fall within the scope of the project; or*
> • *which physical activities not in relation to a physical work (identified in the Inclusion List regulation) fall within the scope of the project.*

The determination of the scope of the project is made pursuant to section 15(1) of the CEAA, as a precursor to determining pursuant to section 15(3) the scope of the environmental assessment (i.e., which environmental effects are to be addressed).

The Responsible Authority has a discretion to determine the scope of the project pursuant to section 15(1). As mentioned previously, with respect to discretionary decisions of substance

made pursuant to authority granted under the CEAA, the standard of review is reasonableness.[2] This gives DIAND, as the responsible authority, a high level of discretion with respect to its determinations as to the scope of the project..

In the course of DIAND's determination of the scope of the project under 15(1), we would suggest that Deloitte & Touche press for each of the new features of the Project Description (i.e. a new landfill, the bio-remediation cell, the destruction of buildings and consolidation of piles of fines) to be considered distinct projects on their own, independent of the water licence operations and any closure plans.

In determining the scope of the project to be assessed, the Responsible Authority's Guide suggests the use of a test which involves distinguishing between the principal project and its accessories. According to that test, the principal project (i.e., either the undertaking with respect to physical work or the physical activity) must always be included in the scope of the project. The scope should also include other physical works or physical activities which are accessory to the principal project. The Responsible Authority's Guide suggests two criteria be used in determining what constitutes an accessory to the principal project: interdependence and linkage. If the principal project cannot proceed without the undertaking of another physical work or activity, then that other physical work or activity may be considered as a component of the scoped project. Furthermore, if the decision to undertake the principal project makes the decision to undertake another physical work or activity inevitable, than that other physical work or activity may also be considered as a component of the scoped project.

An operational policy statement issued by the Agency entitled "Establishing the Scope of the Environmental Assessment" provides that

> "Scoping establishes the boundaries of an environmental assessment (what elements of the project to consider and include and what environmental components are likely to be affected and how far removed those components are from the project)".

The statement recommends that the following be considered when determining the scope of the project:

1. The description of the project (what is the project and is it the principal project?).

2. Justification for the project (what is the purpose of the project and why is it proposed?).

3. Other physical works which are inevitable or physically linked to or are inseparable from the proposed projects.

4. Whether the proposed project is or has been the subject of an assessment of environmental effects by others, such as other environmental assessments; and

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[2] *Bow Valley Naturalists Society v. Canada (Minister of Canadian Heritage)* [2001] F.C.J. No. 18 (Linden, Isaac and Sharlow, JJ.A.) at para. 55.

5. Whether other review processes have occurred or are occurring, and their results.

The Responsible Authority does have a discretionary power to combine two or more projects to which the Act applies into the same environmental assessment if it determines that the projects are so closely related that they can be considered to form a single project. This may be applicable to the 4 new features referred to in the Project Description, and should not pose any practical difficulties, provided that issues related to closure planning are not included.

It is important to be able to demonstrate to DIAND that the 4 new features referred to in the Project Description are not interdependent or linked to closure issues or even the renewal of the water licences, and that they are free-standing projects that would be unaffected by any decisions relating to closure or the licences. To the extent they can be characterized as mitigation measures regardless of whether the mines operate or are closed, they can be separated from closure issues under the Responsible Authority's Guide, and it can be argued that the closure is not inevitable as a result of or inseparable from the 4 new features.

Recent case law lends support to your position in this respect. It suggests that with respect to an expansive or long-term project, it is acceptable for different components of a long-term project to have separate assessments, without requiring a subsequent assessment of the expansive project as a whole

In *Bow Valley Naturalists Society v. Canada (Minister of Canadian Heritage)*,[3] in issue was a proposed redevelopment of the Chateau Lake Louise in Banff National Park. The redevelopment was based on a long-range plan that would see several steps in the overall project. It involved a proposal by Canadian Pacific Hotels to develop a meeting facility at the Chateau Lake Louise in Banff National Park. CP's long range plan envisioned several future developments and many mitigation measures. It included five components: the meeting facility, swimming pool and spa restoration, Tom Wilson room conversion, staff housing, and an additional level to the existing parkade. All of the steps that were proposed were interrelated, impacted on the same physical environment and were, in fact, pieces of the larger project relating to the Chateau. Despite this inherent interconnection, the Court did not take issue with the Responsible Authority's determination that each additional component of the long-range plan would receive its own assessment and did not interfere with what it considered to be the reasonable discretion of the responsible authority in determining the scope of the assessment.

In the case of *Manitoba's Future Forest Alliance v. Canada (Minister of the Environment)*[4], construction of a bridge was at stake. The proponent of the project was also undertaking the conversion and expansion of an existing pulp mill, the construction of a new pulp mill, the construction of hundreds of kilometres of logging roads and other related forestry activities. The approval was challenged on the basis of the narrow scoping of the project. The Federal Court Trial Division found that the Responsible Authority is required under Section 15(3) to assess not just those undertakings proposed by the proponent but also those which were likely to be carried out in relation to the bridge. It concluded that the scope of the project did not need to include the forestry operations, the pulp mills or the construction of the new roads, because they were not

[3] Supra, note 1 at paras. 57 and 58.
[4] (1999), 30 CELR (N.S.) 1(FCTD), Appeal discontinued October 2000

undertakings related to the bridge or likely to be carried out in relation to the bridge. Thus, the case supports a narrow interpretation of what is "in relation to" a particular physical work.

A broader interpretation was applied in *Friends of the West Country Association v. Canada (Minister of Fisheries and Oceans)*[5], where the issue was the construction of two bridges which were part of a proposed mainline road to bring logs to a mill. The Court found that the Responsible Authority could include in the scope of the project undertakings in the life cycle of the main project under the assessment which are ancillary or subsidiary to that physical work However, this decision was persuasively criticized in the *Manitoba's Future* case, with the Court there holding that the construction of two bridges does not make a road connecting them physically inevitable.

Closure Planning Should be Excluded from the Scope of the Project because its Inclusion would Delay the Screening

In addition, if there must be a screening, the scope of the project for the purpose of the screening should be defined to exclude closure considerations for the simple reason that to include closure planning in the screening would delay it. It is not practicable for closure planning to be screened before the water licences expire (particularly in light of the upcoming devolution of authority from DIAND to the Yukon Territorial Government).

Section 11(1) of the CEAA provides that where an environmental assessment of a project is required, the responsible authority shall ensure that the environmental assessment is conducted as early as is practicable in the planning stages of the project and before irrevocable decisions are made.

To include closure planning in the scope of the project to be screened would delay the screening, contrary to the provisions of Section 11(1).

Summary

As discussed in detail above, a strong argument can be made that the water licence renewals are exempt from environmental assessment, by virtue of section 2 of Schedule I of the Exclusion List Regulations under the CEAA, because the proposed operations, even with the new features proposed, are essentially the same as the operations that were previously the subject of screenings. This is supported by case law which holds that minor changes and changes made for the purpose of mitigating environmental effects do not mean that the proposed project is different.

Alternatively, if there must be a screening, the scope of the project subject to the screening should be defined narrowly, to include only the new features in the Project Description, and should not include closure considerations, since the new features outlined in the Project Description are neither interdependent with nor linked to closure planning. There is ample

[5] [2000] 2 F.C. 263 (C.A.), Application for Leave to Appeal to the Supreme Court of Canada dismissed, [1999] S.C.C.A. 585

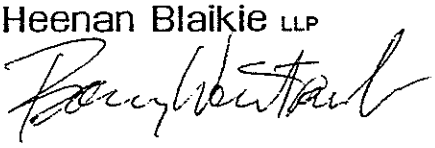
support for upholding a discretionary decision by DIAND to define the scope of the project narrowly.

Furthermore, closure planning should be the subject of a separate screening because to include it would cause delay, which is inconsistent with the requirement of the Act that environmental assessments be conducted as early as is practicable.

Please feel free to contact us if you have any questions or wish us to explore further any of the matters addressed in this letter.

Yours truly,

Heenan Blaikie LLP



Barry M. Weintraub

BMW/jas

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Unofficial Consolidation of the Exclusion List Regulations

as amended 4 November 1999 [SOR/99-437]

WHEREAS THE GOVERNOR IN COUNCIL is satisfied that the environmental effects of certain projects in relation to physical works are insignificant;

THEREFORE, HIS EXCELLENCY THE GOVERNOR GENERAL IN COUNCIL, on the recommendation of the Minister of the Environment, pursuant to subparagraph 59(c)(ii) of the Canadian Environmental Assessment Act*, is pleased hereby to make the annexed Regulations prescribing those projects and classes of projects for which an environmental assessment is not required, effective on the day on which section 59 of the Canadian Environmental Assessment Act comes into force.

REGULATIONS PRESCRIBING THOSE PROJECTS AND CLASSES OF PROJECTS FOR WHICH AN ENVIRONMENTAL ASSESSMENT IS NOT REQUIRED

SHORT TITLE

1. These Regulations may be cited as the *Exclusion List Regulations*.

INTERPRETATION

2. In these Regulations,

"control product" means control product as defined in section 2 of the *Pest Control Products Act*; (*produits antiparasitaires*)

"dugout" means an excavation to hold water for consumption by livestock; (*étang-réservoir*)

"expansion" means an increase in the exterior dimensions or the production capacity of a physical work; (*agrandissement*)

"fixed structure" means the electrical, heating, fire-prevention, plumbing or security structure of an existing building, but does not include a structure that is intended to produce goods or energy; (*structure fixe*)

"footprint" means the area of land occupied by a building or structure at ground level; (*superficie au sol*)

"heritage building" means a building that has been designated as a heritage building by a government authority; (*bâtiment du patrimoine*)

"historic canal" means a historic canal set out in column I of an item of Schedule I to the *Historic Canals Regulations* and includes any federal lands

appertaining or incident to a historic canal; (*canal historique*)

"hook-up" means a structure or line that connects a building to a main gas, sewer, water, electrical transmission or telecommunication line; (*raccordement*)

"international electrical transmission line" means an electrical transmission line constructed or operated for the purpose of transmitting electricity from a place in Canada to a place outside Canada or to a place in Canada from a place outside Canada; (*ligne de transport d'électricité internationale*)

"irrigation structure" means one of the following that is used for irrigating agricultural land:

a. a buried pipeline,
b. a pipe,
c. a pump,
d. a pump house,
e. a reservoir,
f. a drain, or
g. a canal lined with asphalt, wood, concrete or other material; (*structure d'irrigation*)

"modification" means an alteration to a physical work that introduces a new structure or eliminates an existing structure and does not alter the purpose or function of the work, but does not include an expansion; (*modification*)

"national historic site" means a place that is commemorated under section 3 of the *Historic Sites and Monuments Act* and is under the administration of the Parks Canada Agency; (*lieu historique national*) [SOR/99-437]

"national park" means

a. a park described in Schedule I to the *National Parks Act*, and
b. a park established pursuant to a federal-provincial agreement that is under the responsibility of the Minister of Communications and is not described in Schedule I to the *National Parks Act*; (parc national)

"national park reserve" means a reserve established under *An Act to amend the National Parks Act and to amend An Act to amend the National Parks Act*, chapter 48 of the Statutes of Canada, 1988, and the lands described in the schedule to the *Mingan Archipelago National Park Act*; (*réserve foncière*)

"net repair area" means a paved or finished area set aside for the repair of fishing nets; (*aire de réparation de filets*)

"nuclear facility" means nuclear facility as defined in section 2 of the *Atomic Energy Control Regulations*; (*établissement nucléaire*)

"oil and gas pipeline" means a pipeline that is used, or is intended to be used, for the transmission of hydrocarbons alone or with any other commodity; (*pipeline d'hydrocarbures*)

"polluting substance" means a substance that, if added to a water body, is likely to degrade or alter or form part of a process of degradation or alteration of the physical, chemical or biological conditions of the water body to an extent that is detrimental to its use by human beings, animals, fish or plants; (*substance polluante*)

"right of way" means land that is subject to a right of way and that is developed

for a telecommunication or electrical transmission line, a switching station, an oil and gas pipeline, a railway or a road; (*emprise*)

"water body" means a water body, including a canal, reservoir, an ocean and a wetland, up to the high-water mark, but does not include a sewage or waste treatment lagoon or a mine tailings pond; (*plan d'eau*)

"wetland" means a swamp, marsh, bog, fen or other land that is covered by water during at least three consecutive months of the year. (*terres humides*)

GENERAL

3. The projects and classes of projects that are set out in Schedule I and carried out in places other than a national park, national park reserve, national historic site or historic canal are prescribed projects and classes of projects for which an environmental assessment is not required.

4. The projects and classes of projects that are set out in Schedule II and carried out in a national park, national park reserve or national historic site are prescribed projects and classes of projects for which an environmental assessment is not required.

5. The projects and classes of projects that are set out in Schedule II or III and carried out in a historic canal are prescribed projects and classes of projects for which an environmental assessment is not required.

SCHEDULE I
(Section 3)

EXCLUSION LIST FOR PLACES OTHER THAN NATIONAL PARKS, NATIONAL PARK RESERVES, NATIONAL HISTORIC SITES OR HISTORIC CANALS

PART I: GENERAL

1. The proposed maintenance or repair of an existing physical work.

2. The proposed operation of an existing physical work that is the same as an operation for which an environmental assessment has been previously conducted under either the *Canadian Environmental Assessment Act* or the *Environmental Assessment Review Process Guidelines Order* where

a. as a result of the assessment, the environmental effects have been determined to be insignificant, taking into account the implementation of mitigation measures, if any; and
b. the mitigation measures and follow-up program, if any, have been substantially implemented.

3. The proposed construction or installation of a building with a footprint of less than 100 m2 and a height of less than 5 m that would not

a. be carried out in or on or within 30 m of a water body; and
b. involve the likely release of a polluting substance into a water body.

3.1 The proposed construction, installation, expansion or modification of a physical work, not otherwise referred to in this Schedule, with a footprint of less than 25 m2 that would not

a. be carried out in or on or within 30 m of a water body; or
b. involve the likely release of a polluting substance into a water body. [SOR/99-437]

4. The proposed expansion or modification of an existing building, including its fixed structures, that would not

a. increase the footprint or height of the building by more than 10 per cent;
b. be carried out in or on or within 30 m of a water body; and
c. involve the likely release of a polluting substance into a water body.

5. The proposed construction, installation, expansion or modification of an environmental scientific data collection instrument and its housing and enclosure that would not

a. be carried out in or on or within 30 m of a water body; or
b. involve the likely release of a polluting substance into a water body. [SOR/99-437]

6. The proposed construction, installation, expansion or modification of a ramp, door or handrail to facilitate wheelchair access.

7. The proposed construction, installation, expansion or modification of a temporary exhibition structure inside, or affixed to the exterior of, an existing building.

8. The proposed construction of a sidewalk or boardwalk, or a parking lot with a parking capacity of 10 automobiles or fewer, where the construction

a. would be contiguous to an existing building;
b. would not be carried out in or on or within 30 m of a water body; and
c. would not involve the likely release of a polluting substance into a water body.

9. The proposed expansion or modification of an existing sidewalk, boardwalk or parking lot that would not

a. increase the area of the sidewalk, boardwalk or parking lot by more than 10 per cent;
b. be carried out in or on or within 30 m of a water body; and
c. involve the likely release of a polluting substance into a water body.

10. The proposed expansion or modification of an existing fence that would not

a. increase the length or height of the fence by more than 10 per cent;
b. be carried out in or on or within 30 m of a water body; and
c. involve the likely release of a polluting substance into a water body.

11. The proposed construction, installation, expansion or modification of a hydrant or hook-up, where

a. the hydrant or hook-up would be or is part of an existing farm or municipal system of distribution; and
b. the construction, installation, expansion or modification would not involve the crossing of a water body other than an aerial crossing by a telecommunication or electrical transmission line.

12. The proposed construction, installation, expansion or modification of a sign no surface of which would have or has an area of more than 25 m2 and which would be or is situated at a distance of less than 15 m from an existing building.

13. The proposed construction, installation, expansion or modification of a radiocommunication antenna and its supporting structure that

a. would not be carried out in or on or within 30 m of a water body;
b. would not involve the likely release of a polluting substance into a water body;
c. would have one of the following characteristics:
    i. the antenna and supporting structure are affixed to an existing building,
    ii. the antenna and supporting structure are situated at a distance of less than 15 m from an existing building, and
    iii. neither the antenna nor its supporting structure nor any of its supporting lines have a footprint of more than 25 m2; and
d. in the case of subparagraph (c)(iii), would not require a permit under paragraph 25(1)(a) or 27(a) of the *Territorial Land Use Regulations*.

14. The proposed construction, installation, expansion or modification of a temporary field camp used for scientific or technical research, or for reforestation, if

a. the temporary field camp
    i. would be in use for fewer than 200 person-days, or
    ii. is a military field camp or a designated training area established under the authority of the Minister of National Defence before January 19, 1995; and
b. the proposed construction, installation, expansion or modification would not
    i. be carried out in or on or within 30 m of a water body, and
    ii. involve the likely release of a polluting substance into a water body. [SOR/99-437]

15. The proposed expansion or modification of an existing road that would be carried out on the existing road right of way and would not

a. lengthen the road;
b. widen the road by more than 15 per cent;
c. be carried out in or on or within 30 m of a water body; and
d. involve the likely release of a polluting substance into a water body.

16. The proposed demolition of an existing building with a floor area of less than 1 000 m2 that would not

a. be carried out in or on or within 30 m of a water body;
b. involve the likely release of a polluting substance into a water body; and
c. be carried out within 30 m of another building.

17. The proposed construction, installation or modification of Canada - United States international boundary monuments.

PART II: AGRICULTURE

18. The proposed modification of an existing irrigation structure that would not involve the likely release of a polluting substance into a water body.

19. The proposed construction, expansion or modification of a domestic or farm water supply well, pump house, water-tank loading facility or dugout on agricultural land that would not

a. be carried out in or on or within 30 m of a water body; and
b. involve the likely release of a polluting substance into a water body.

20. The proposed construction, expansion or modification of a centre pivot or side roll sprinkler on agricultural land that would not

a. be carried out in or on or within 30 m of a water body; and
b. involve the likely release of a polluting substance into a water body.

PART III: ELECTRICAL AND NUCLEAR ENERGY

21. The proposed construction or installation of an electrical transmission line, other than an international electrical transmission line, with a voltage of not more than 130 kV, where the construction or installation would not

a. be carried out beyond an existing right of way;
b. involve the likely release of a polluting substance into a water body; and
c. involve the placement in or on a water body of the supporting structures for the electrical transmission line.

22. The proposed expansion or modification of an existing telecommunication or electrical transmission line, other than an international electrical transmission line, that would not

a. lengthen the line by more than 10 per cent;
b. be carried out beyond an existing right of way;
c. involve the likely release of a polluting substance into a water body; and
d. involve the placement in or on a water body of the supporting structures for the telecommunication or electrical transmission line.

23. The proposed construction or installation of a switching station associated with a telecommunication or electrical transmission line with a voltage of not more than 130 kV, other than an international transmission line, where the construction or installation would not

a. be carried out beyond an existing right of way;
b. be carried out in or on or within 30 m of a water body; and
c. involve the likely release of a polluting substance into a water body.

24. The proposed expansion or modification of an existing switching station associated with a telecommunication or electrical transmission line, where the expansion or modification would not

a. be carried out beyond an existing right of way;
b. be carried out in or on or within 30 m of a water body; and
c. involve the likely release of a polluting substance into a water body.

25. The proposed construction, installation, expansion or modification of an international electrical transmission line with a voltage of not more than 50 kV that would not

a. be carried out beyond an existing right of way;
b. extend more than 4 km outside Canada;

c. involve the likely release of a polluting substance into a water body; and
d. involve the placement of the supporting structures for the line in or on or within 30 m of a water body.

26. The proposed construction, installation, operation, modification or decommissioning of a particle accelerator, when the particle accelerator is [SOR/99-437]

a. an electron linac or cyclotron accelerator capable of operating at no more than 50 MeV; or
b. an electrostatic accelerator capable of operating at no more than 5 MV.

27. The proposed construction, installation, operation, expansion, modification, decommissioning or abandonment of a physical work that requires a licence under subsection 7(1) of the *Atomic Energy Control Regulations*, where

a. the physical work has a floor area of 100 m2 or less and a height of 5 m or less;
b. in the case of a proposed expansion, the footprint or height of the physical work is not increased by more than 10 per cent; and
c. the physical work is not one of the following:
    i. a facility for the separation and processing of radioisotopes or a facility for the manufacture of sealed radiation sources, where the activity of the resident inventory of radioactive material in that facility is more than 1PBq or where the activity of the annual throughput or radioactive material is more than 1 PBq, and
    ii. an irradiation facility that employs a pool-type irradiator, where the form and composition of the radioactive material within the sealed radiation source is such that the material would be readily dispersed in air or easily dissolved in water if the seal were ruptured.

28. The proposed construction, installation, operation, modification, decommissioning or abandonment of monitoring, safety or security equipment that is affixed or adjacent to an existing nuclear facility.

29. The proposed modification of an existing nuclear facility or an existing facility referred to in subparagraph 27(c)(i) or (ii) that is the same as a modification for which an environmental assessment has been previously conducted under either the *Canadian Environmental Assessment Act* or the *Environmental Assessment Review Process Guidelines Order*, where

a. as a result of the assessment, the environmental effects have been determined to be insignificant taking into account the implementation of mitigation measures, if any; and
b. the mitigation measures and follow-up program, if any, have been substantially implemented.

30. The proposed expansion or modification of any fixed structure within an existing nuclear facility or an existing facility referred to in subparagraph 27(c)(i) or (ii) that would not

a. be carried out in or on or within 30 m of a water body; and
b. involve the likely release of a polluting substance into a water body.

PART III.1: OIL AND GAS PIPELINES

30.1 (1) Subject to subsection (2), the proposed addition or installation of any of the following components with respect to an existing onshore oil and gas pipeline:

a. a new connection;
b. piping;
c. cathodic protection systems, including rectifiers;
d. valves, including valve vaults and pressure transmitters;
e. compressor and pump station components including compressors, pumps, motors, silencers, scrubbers, gas seals, system boilers, scraper traps, switch gear, transformers and uninterruptible power supply;
f. storage tank components, including mixers and ladders;
g. metering and regulating facilities;
h. quality measurement systems, including analyzers for water or basic sediment, densitometers, calorimeters, in-line viscometers, gas chromatographs and automatic/composite samplers; or
i. mechanical and electrical systems of a facility building, including plumbing, air conditioning, heating and ventilation systems, not involving the use or disposal of chlorofluorocarbons.

(2) Subsection (1) does not apply to the proposed addition or installation of a pipeline component that would

a. result in the extension of the pipeline beyond the existing limits of the right-of-way or of other property on which the pipeline is located;
b. be undertaken within 30 m of a water body; or
c. involve the likely release of a polluting substance into a water body, or result in an increase in airborne emissions or noise during the operation of the facility. [DORS/99-437]

30.2 The proposed relocation of a section of oil and gas pipeline that would not

a. result in the extension of the pipeline beyond the existing limits of the right-of-way or of other property on which the pipeline is located;
b. be undertaken within 30 m of a water body; or
c. involve the likely release of a polluting substance into a water body, or result in an increase in airborne emissions or noise during the operation of the facility. [SOR/99-437]

PART IV: FORESTRY

31. The proposed expansion or modification of an existing drainage structure, other than a drainage structure connected to a water body, on forested land, where the expansion or modification

a. would not lengthen the structure by more than 10 per cent; and
b. would be carrie

PART V: WATER PROJECTS

32. The proposed construction, expansion, modification or demolition that would not involve the likely release of a polluting substance into a water body, of a structure, such as a bait storage depot, net repair area or patrol cabin, that

a. would be or is located on land;
b. would be or is associated with fishing or the use of small pleasure craft; and
c. would have or has a floor area of less than 100 m2 and a height of less than 5 m.

33. The proposed construction, installation, expansion or modification of a fish habitat improvement structure that would not involve the use of heavy

machinery.

34. The proposed modification of an existing wharf, other than a floating wharf, or of an existing breakwater that is accessible by land, where the modification would not

a. be carried out below the high-water mark of the breakwater or wharf;
b. involve dredging; and
c. involve the likely release of a polluting substance into a water body.

35. The proposed re-installation, expansion or modification of an existing floating wharf that would not increase its area by more than 10 per cent.

36. The proposed demolition of an existing wharf that would not involve

a. the use of explosives; and
b. the likely release of a polluting substance into a water body.

PART VI: TRANSPORTATION

37. The proposed expansion or modification of an existing pavement or gravel area within the boundary of an airport, as defined in subsection 3(1) of the *Aeronautics Act*, that would not

a. increase the pavement or gravel area by more than 10 per cent;
b. be carried out in or on or within 30 m of a water body; and
c. involve the likely release of a polluting substance into a water body.

38. The proposed modification of existing aircraft manoeuvring lights or navigation aids.

39. The proposed construction, installation, expansion or modification of an automatic warning structure at a railway level crossing.

40. The proposed construction, installation, expansion or modification of a railway traffic control signal structure on an existing railway right of way.

41. (1) Despite subsection 30.1(1) and paragraph 30.2(a), if any of the facilities described in the following paragraphs cross under a railway or road, the proposed construction, installation, replacement or modification of that part of the facility that crosses under the railway or road as well as any other part of the facility located within the railway or road right-of-way

a. an oil and gas pipeline or a pipeline used for the transmission of any other flammable or highly volatile liquid;
b. a water pipe; or
c. a sewer or a drain.

41. (2) Subsection (1) does not apply if the proposed construction, installation, replacement or modification would not*

a. be undertaken within 30 m of a water body; or
b. involve the likely release of a polluting substance into a water body, or result in an increase in airborne emissions or noise during the operation of the facility. [SOR/99-437]

* The official version of this subsection erroneously contains the word "not" immediately prior to paragraph (a); therefore, it should be read as follows:

(2) Subsection (1) does not apply if the proposed construction, installation, replacement or modification would

a. be undertaken within 30 m of a water body; or
b. involve the likely release of a polluting substance into a water body, or result in an increase in airborne emissions or noise during the operation of the facility. Steps are being taken to remedy this matter.

42. The proposed modification of that part of an existing culvert that

a. is not connected to a water body;
b. crosses under a railway or road; and
c. is within the existing railway or road right of way.

43. The proposed modification of an existing railway line, except for a modification outside the right-of-way or beyond 100 m of the centre line of the railway line for a distance of greater than 3 km, that would not

a. be carried out in or on or within 30 m of a water body; and
b. involve the likely release of a polluting substance into a water body. [SOR/99-437]

44. The proposed modification of an existing road crossing, as defined in subsection 4(1) of the Railway Safety Act, where the modification would

a. be carried out on an existing right of way;
b. not be subject to an authorization under subsection 101(3) of the *Canada Transportation Act*; [SOR/99-437]
c. not be carried out in or on or within 30 m of a water body; and
d. not involve the likely release of a polluting substance into a water body.

SCHEDULE II
(Sections 4 and 5)

EXCLUSION LIST FOR HISTORIC CANALS

1. The proposed maintenance or repair of an existing dam, historic canal, lock or retaining wall, where the maintenance or repair would not involve

a. the removal or the lowering of the level of the water in any part of the canal;
b. the likely release of a polluting substance into the canal; and
c. dredging, blasting or filling.

2. The proposed maintenance or repair, that would not result in the likely release of a polluting substance, of an existing structure, where the structure is used

a. as a base for navigation aids;
b. to control the flow of water in the main channel of a historic canal; or

c. as a breakwater.

3. The proposed construction, installation, maintenance or repair of any in-water structure that does not have a solid foundation or penetrate the bed of a historic canal, where that installation, maintenance or repair would not involve

a. the likely release of a polluting substance into the canal;
b. the use of heavy machinery on the bed of the canal to install or maintain the structure; and
c. dredging.

4. The proposed construction, installation, maintenance or repair of shore stabilization works that would not involve

a. the likely release of a polluting substance into a historic canal;
b. the use of heavy machinery on the bed of the canal;
c. dredging or excavation; and
d. any encroachment on the bed of the canal.

5. The proposed construction, installation, maintenance or repair of a non-commercial marine railway or boat lift that would not involve

a. the likely release of a polluting substance into a historic canal;
b. the use of heavy machinery on the bed of the canal to install, maintain or repair the marine railway or boat lift; and
c. dredging.

6. The proposed construction, installation, maintenance or repair of an aerial telecommunication or electrical transmission line that would cross or does cross a historic canal and is supported by a single pole on either side of the canal.

7. The proposed construction, installation, maintenance or repair of a submarine cable or submarine utility pipeline, other than an oil and gas pipeline, where the construction, installation, maintenance or repair would not involve

a. the crossing of a wetland; and
b. any alteration to the bed of a historic canal.

COMING INTO FORCE

These Regulations come into force on the day on which they are registered. [SOR/99-437]

APPENDIX

Brief Explanation of Each Amendment

Comprehensive Study List Regulations

These Regulations list types of projects that are subject to a comprehensive study (a more extensive environmental assessment) rather than a screening.

2. The definition of "national historic site" has been revised for greater clarity wherever this term is used in these Regulations.

Schedule I

3.1 This new section excludes specified undertakings involving small physical works from any requirement for environmental assessment if the stated conditions are met.

5. This modification removes the exception for a water quality data collection instrument. This means that any of the specified activities involving any environmental scientific data collecting instrument is excluded.

14. This modification serves to expand the scope of this section to include undertakings involving temporary military field camps, subject to specified conditions.

26. This modification corrects the inadvertent omission of the term "decommissioning" from the preceding version of this section relating to a particle accelerator.

30.1 This new section excludes the addition or installation of any of the specified components on an existing oil and gas pipeline if specified conditions are met.

30.2 This new section excludes any relocation of a section of oil and gas pipeline, subject to specified conditions.

41. The modification of this section widens the range of excluded undertakings with respect to pipe crossings, specifies the types of pipes affected, and sets certain conditions that must be met.

43. This modification removes the inappropriate word "deviation" and specifies additional conditions that must be met to qualify for exclusion.

44(b) The amended section refers to the Canada Transportation Act instead of the (repealed) *Railway Act*.

Schedule II *(applies within national parks and other protected areas)*

1. This modification widens the range of exclusion to apply to a "structure" rather than a "building", while retaining all specified conditions. This will convey more accurately the original intention of the Department of Canadian Heritage.

2. Similar to section 1, above.

6(b) Part of this paragraph is hereby amended to clarify the original intent, that is, not to exclude the application of dust control or pest control products.

8. A drafting error in the current section of the Regulations is corrected by substituting "or" for "and" between paragraphs (a) and (b) to indicate that, if either of the two conditions are met, the exclusion does not apply.

11. This modification widens the scope of application of this section. The exclusion now applies to the operation of any existing physical work located within a national park or other protected area, as prescribed therein, if an assessment of the same operation has already been conducted and all specified conditions are met. The requirements concerning licences, permits and approvals have been deleted.

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Wes Treleaven	September 27, 2002
Number of Pages (including cover sheet):	**To confirm receipt, or if you do not receive all pages, please call:**
17	(416) 601 6150 x2049

Comments:

RE: ANVIL RANGE MINING CORPORATION

Please see attached.

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Deloitte & Touche

September 27, 2002

Robert Lauer
Department of Indian and Northern Affairs Canada
Les Terrasses de la Chaudière, Room 607
10 Wellington St.
Ottawa, Ontario
K1A 0H4

Dear Robert,

We are writing, as the proponent, in regard to the current progress on the CEAA screening relating to our upcoming application for renewal of the water licences for the Anvil Range property.

As the Court's officer, we must comply with all applicable laws and regulations covering the mine site, including the terms of the water licences, as well as the requirements of the Canadian Environmental Assessment Act. We also ensure that all costs are appropriate thus providing fiscal oversight for this administration. In that light, we have concerns about the apparent direction of the current CEAA review and potential significant increased scope.

In January 2002, it was decided in consultation with DIAND Environment Directorate, Water Resources and DIAND Ottawa, that to declare the property abandoned under Section 39 of the Yukon Waters Act was unacceptable because it would not facilitate a transparent closure planning and the related permitting process. Proceeding in this manner, would also not follow the spirit of the Devolution Agreement and understandings reached under it.

As such, the only alternative was to apply for renewal of the water licences. It was consequently decided, in consultation with DIAND, to apply for a five-year term for the following reasons:

- one licence allows for more flexibility in planning current and future activities at the site
- five years is an optimum term because time is required to study and compile and permit a new closure plan. In particular, transition time must be integrated into plans to allow for supplementary negotiation and clarification of roles of interested parties relating to Type II sites under the Devolution Agreement and for the building of new regulatory capacity relating to environmental assessment.

A Project Description was submitted in May 2002 as well as a Project Description Supplement in September 2002. The latter addressed comments received from Responsible Authorities relating to the management context, applicability of the 1996 ICAP and closure planning timelines.

During recent meetings in August in Whitehorse, the question of possible exclusion of this project under Section 2 of the Exclusion List regulations was brought up by Gartner Lee Limited, our subconsultants for the preparation of the Environmental Assessment Report (EAR) and then to the attention of DIAND

Environment Directorate by the Interim Receiver. We were invited to send a letter to enquire on this topic, which we did, dated August 29 2002 (see attached). We received a response, dated September 18 (also attached), advising that "primary undertaking of the proposed project, care and maintenance and other site activities, was fundamentally different from the operation of a mine which is currently licenced" and therefore a CEAA process was still required.

In addition, conversations with the Responsible Authorities over the last two months have pointed to the potential need for mediation to address the question of uncertainty relating to ongoing adverse impacts at the mine site, the fact that closure alternatives will have to be considered and questioning the need for a Comprehensive Study. These considerations all point to a potential broad scope for the EAR.

The Interim Receiver is now in a position where we are faced with two alternatives which we foresee will be equally costly and time consuming. These alternative involve either engaging in a lengthy discussion about scope prior to submitting the EAR, which entails legal and management fees or submitting an EAR as soon as possible that touches upon every aspect of the property, regardless of their relevance to our proposed activities. The latter alternative would entail a very lengthy review time as discussions about scope and relevance would essentially be held during the review of the EAR. This alternative would entail significant management and sub-consultant fees.

Our concerns lie in the fact that the apparent increasing scope of the review could entail significant costs to DIAND. Our position as an officer of the Court is that these costs should be contained as much as possible for the following reasons. Firstly, this CEAA process is driven by a regulatory requirement rather than proposed material changes to the property. Secondly, we do not believe that the RAs have appropriately addressed our enquiry regarding the need for the CEAA process. We have been discussing their response to our enquiry with our legal counsel, Heenan Blaikie LLP, who have advised us, per the attached letter, that it can be argued, from a number of legal perspectives, that the CEAA review is either not needed or should be contained in scope to new activities proposed at the site, which are limited in number. Finally, the apparent direction of the process, with respect to scope, points to the strong possibility that the water licences will not be renewed prior to their expiration. As the Interim Receiver is not prepared to manage this site in a situation of non-compliance, the lack of timely renewal of the licence could result in the Interim Receiver seeking its discharge from the Court and the property being declared abandoned, which was the undesired alternative that the Interim Receiver, in consultation with DIAND, had sought to avoid by initiating the process of renewing the licences.

In conclusion, as requested during our meeting yesterday, at which time this matter was fully discussed, we are forwarding the relevant correspondence for your review. We hope that this will assist you in your discussions next week and we look forward to receiving your comments on how this process will likely unfold.

Yours very truly,
DELOITTE & TOUCHE INC
in its capacity as Interim Receiver of
ANVIL RANGE MINING CORP

Per:

Wes A. Treleaven, CA, CIRP
Senior Vice-President

Attachments

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Deloitte & Touche

August 29, 2002

Ms. Leslie Gomm
Manager, Project Assessment
DIAND Environment Directorate
345-300 Main St.
Whitehorse, YK
Y1A 2B5

Dear Leslie:

Anvil Range Mine Complex – Water License Renewal, Possible CEAA Exemption

We are writing to discuss the possible exemption from the CEAA screening process, of the water license renewal for the Anvil Range Mine Complex.

CEAA is triggered for this project under Sections 5(1)(b) and 5(1)(d) of the Act. A *CEAA* assessment is required unless the project is exempt as per the *Exclusion List Regulations*, or if it does not meet the definition of 'project' under *CEAA*. The water licensing renewal does meet the definition of project under CEAA; however, it is possible that the project or parts of it may be exempt under the *Exclusion List Regulations*. Schedule I (Section 2), Part I, Item 2 of these regulations, states the following:

The proposed operation of an existing physical work that is the same as an operation for which an environmental assessment has been previously conducted under either the Canadian Environmental Assessment Act or the Environmental Assessment Review Process Guidelines Order [EARPGO] where

> *(a) as a result of the assessment, the environmental effects have been determined to be insignificant, taking into account the implementation of mitigation measures, if any, and*
> *(b) the mitigation measures and follow-up program, if any, have been substantially implemented.*

It is noted that environmental assessments have been previously conducted at the Faro and Vangorda mine sites under CEAA and/or EARPGO. The most recent screening reports were issued by Indian and Northern Affairs Canada in July 1999 for the development of the Vangorda Plateau site (water license IN89-0002) and in November 1996 for the Faro site to amend its water licence IN89-0001 (now currently 1220-03003).

In reference to the *Anvil Range Mining Corporation – Interim Receivership Project Description, May 31, 2002* report, it is our opinion that there are no substantive changes to the proposed operations to be carried

out at the mine site for the renewal of the water license. It is recognized that some changes are proposed in the *Project Description* report, but these are designed to achieve the objectives of the care and maintenance activities under the existing water licenses.

In light of a possible exemption under the *Exclusion List Regulations*, we would like to discuss with you the necessity of proceeding with the environmental assessment work that is currently being conducted, and what the next steps should be in this process.

Please contact Shannon Glenn at 416-601-6453 to discuss this subject in further detail. Thank you for your consideration in this matter.

Yours very truly,
DELOITTE & TOUCHE INC
in its capacity as Interim Receiver of
ANVIL RANGE MINING CORP.

Per:

Wes A. Troteaven, C.A. CIRP
Senior Vice-President

c: Mr. Ian Church, DIAND Environment Directorate
Ms. Valerie Chort, Deloitte & Touche Inc. National Environment Health and Safety Services Leader
Ms. Shannon Glenn, Manager, Environment Health and Safety Services
Mr. Stephen Morison, Gartner Lee Limited

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Fax: (867) 667-3216

Your file - Votre référence

Our file - Notre référence
5510-5-002J

September 20, 2002

Ms. Shannon Glenn, Manager
Deloitte & Touche
Enterprise Risk Services
Suite 1400, BCE Place
181 Bay Street
Toronto, ON
M5J 2V1

Dear Ms. Glenn:

Re: Anvil Range Mine Complex - Water Licence Renewal, Possible CEAA Exemption

We received your letter dated August 29, 2002 requesting an exemption from a screening under the Canadian Environmental Assessment Act (CEAA) for the above mentioned project. The Responsible Authorities (RAs) have reviewed your request and have determined that this project is not exempt from an environmental assessment under CEAA. The reason an environmental assessment under CEAA is required is that the primary undertaking of the proposed project, care and maintenance and other site activities, is fundamentally different than the operation of a mine which is presently licenced under QZ95-003(Faro) and IN89-002(Vangorda).

In light of the above you should continue as planned with the preparation of the Environmental Assessment Report. Where possible and applicable, information from the previous assessments will be used to facilitate the process.

Please contact Leslie Gomm at 867-667-3865 to discuss this matter in detail.

Sincerely,

Leslie Gomm, P.Eng.
Manager, Project Assessment

c.c. Bill Slater, DIAND Water Resources
Sandra Orban, DFO
Benoit Godin, Environment Canada
Sarah Kaiff, DIAND Headquarters
Hugh Copland, Pipeline Prep. Unit

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The Honourable Donald J. Johnston, P.C., O.C. (from 1984 to 1996)
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September 27, 2002

Deloitte & Touche Inc.
Risk Consulting and Regulatory Services/
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79 Wellington Street West
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Toronto, ON M5K 1B9

Attention: Wesley Treleaven
Shannon Glenn

Dear Sirs:

Re: Anvil Range Mine Complex
Water Licence Renewal
Possible CEAA Exemption

We are writing with respect to the interpretation and application of the *Canadian Environmental Assessment Act* (the "CEAA") with a view to considering the scope of any potential environmental assessment screening in respect of the upcoming water licence renewal applications for the Anvil Range Mine Complex ("Anvil Range").

In view of the expiry of the existing licences next year, any environmental assessment screening for the renewal applications must be completed expeditiously. Any screening in connection with the renewal of the existing licences ought to be a relatively simple, straightforward exercise, since it is merely a renewal that is being proposed in the immediate future. While the renewal does include some proposed new operational features, these new features are simply additional mitigative measures and do not change the nature of the operations.

By contrast, closure planning involves the cessation of operations, and involves an entirely different set of considerations. Closure planning will involve, among other things, studies to consider, assess and address uncertain potential impacts on the environment from long-standing existing physical features of the sites. This closure planning process logically comes after and is

distinct from the continuing operations contemplated by the renewal applications. Environmental issues surrounding continuing the existing operations until closure can be planned and implemented are of much lesser significance than issues relating to closure, and have been the subject of previous environmental assessment screening.

In addition, since screening in connection with closure planning cannot practically be completed prior to the expiry of the existing licences, it is therefore essential in order to avoid a situation of non-compliance during the closure planning process that any screening in connection with the renewal applications be considered prior to and separately from closure planning.

This letter discusses the legal framework of environmental screening, explaining how the statute and regulations, court decisions and the Canadian Environmental Assessment Agency guidelines support the practical reality that the scope of any environmental screening of the renewal applications must be limited so that the water licence renewals can be renewed before they expire.

This letter will set forth three main propositions, which we believe are supported by relevant authorities, as follows:

1. The water licence renewals are entirely exempt from environmental assessment, regardless of whether the proposed operations are considered to be primarily maintenance activities or whether they are considered to be the same as operations that were previously subject to environmental assessment, pursuant to the Exclusion List Regulations;

2. Alternatively, if there is to be an environmental assessment in connection with the renewals, the scope of the project to be assessed should be limited to new features proposed in the Project Description and/or the operations for which the water licences are to be renewed. This does not include closure considerations, because those new features and the continuing operations contemplated by the water licence renewal applications are not interdependent with or inevitably linked to closure planning; and

3. Closure Plans must be the subject of a separate environmental assessment, because to include it in the scope of any environmental assessment screening in respect of the new features or the water licence renewals would be impractical due to lack of knowledge of site conditions and the need to address closure criteria.

Legislative Provisions

Section 5(1) of the CEAA outlines the "triggers" for environmental assessment. It provides that

> *"An environmental assessment of a project is required before a federal authority exercises one of the following powers or performs one of the following duties or functions in respect of a project, namely, where a federal authority:*

(a) is the proponent of the project and does any act or thing that commits the federal authority to carrying out the project in whole or in part;

(b) makes or authorizes payments or provides a guarantee for a loan or any other form of financial assistance to the proponent for the purpose of enabling the project to be carried out in whole or in part, except where the financial assistance is in the form of any reduction, avoidance, deferral, removal, refund, remission or other form of relief from the payment of any tax, duty or impost imposed under any Act of Parliament, unless that financial assistance is provided for the purpose of enabling an individual project specifically named in the Act, regulation or order that provides the relief to be carried out;

(c) has the administration of federal lands and sells, leases or otherwise disposes of those lands or any interests in those lands, or transfers the administration and control of those lands or interests to Her Majesty in right of a province, for the purpose of enabling the project to be carried out in whole or in part; or

(d) under a provision prescribed pursuant to paragraph 59(f), issues a permit or licence, grants an approval or takes any other action for the purpose of enabling the project to be carried out in whole or in part.

It should be noted that the introductory language of Subsection 5(1) refers to the environmental assessment *of a project* and that powers or functions set out in Subsection 5(1) (a) through (d) are exercised or performed *"in respect of a project"*.

In section 2(1) of the Act, *"project"* is defined as follows:

"Project" means

(a) In relation to a physical work, any proposed construction, operation, modification, decommissioning, abandonment or other undertaking in relation to that physical work, or

(b) Any proposed physical activity not relating to a physical work that is prescribed or is within a class of physical activities that is prescribed pursuant to regulations made under paragraph 59(b).

The regulations prescribed pursuant to paragraph 59(b) of the Act (known as the "Inclusion List Regulations") include water licence renewals pursuant to the *Yukon Waters Act*. Section 68 of the Schedule to the Inclusion List Regulations prescribe "physical activities relating to the use of waters or the deposit of waste that require a licence under subsection 14(1) of the *Yukon Waters Act* or that are the subject of a renewal of or amendment to a licence under paragraph 18(1)(a) or (b), or physical activities relating to a cancellation of a licence under paragraph 18(1)(c) of that Act". Thus, the trigger for environmental assessment of the water licence renewals would seem to be that they are "projects" (as that term is defined) due to the regulations under sub-paragraph (b) of the definition of "project".

The Exclusion List Regulations Exempt the Water Licence Renewal because an Environmental Assessment was Previously Conducted

Section 3 of the regulations promulgated pursuant to sub-paragraph 59(c)(2) of the Act (the "Exclusion List Regulations") provides that

"The projects and classes of projects that are set out in Schedule I and carried out in places other than a national park, national park reserve, national historic site or historic canal are prescribed projects and classes of projects for which an environmental assessment is not required".

Schedule I of the Exclusion List Regulations, section 2, includes the following:

> *2. The proposed operation of an existing physical work that is the same as an operation for which an environmental assessment has been previously conducted under either the Canadian Environmental Assessment Act or the Environmental Assessment Review Process Guidelines Order where:*
>
> *a) as a result of the assessment, the environmental effects have been determined to be insignificant, taking into account the implementation of mitigation measures, if any; and*
>
> *b) the mitigation measures and follow-up program, if any, have been substantially implemented.*

The purpose behind the exclusion in Section 2 of Schedule I is obviously to avoid duplication of previous environmental assessment screenings. In light of that purpose, pursuant to the Exclusion List Regulations the water licence renewals ought to be exempt because environmental assessments were previously conducted.

The most recent screenings occurred in July of 1990 for the development of the Vangorda Plateau site (water licence IN89-002) and in November of 1996 for the Faro site pursuant to an amendment of the water licence IN89-001 (now QZ95-003). We understand that there were other earlier assessments of the Faro site.

We have reviewed the previous screenings in respect of the water licence applications in question. In respect of Faro, these included such issues as the recommended diversion of Faro Creek in the Faro pit, the proposed Faro pit dam, monitoring programs, the submission of an integrated comprehensive abandonment plan, post reclamation security and cumulative environmental effects. With respect of Vangorda, the screening include issues such as water quality in Vangorda Creek, the protection of salmon and salmon habitat, waste rock dumps, the flooding of the Vangorda pit, wildlife impacts, including impacts on sheep and sheep habitat, safety, long term stability, socio-economic issues, impact on drinking water quality, concerns relating to native users' rights to fish, hunt and trap, as well as recreational use impact.

It is clear in light of these topics of the previous environmental assessment screenings that they are properly characterized as broad ranging assessments of potential environmental impacts at the sites.

We understand, however, that it has been suggested that the previous environmental assessments were inadequate. To the extent a responsible authority has discretion under the CEAA to determine the adequacy of the previous assessment in determining whether or not a new environmental assessment is required, it would be extremely difficult to argue against such a determination. Where discretion is given to a responsible authority, it will not be interfered with unless the decision resulting from the exercise of such discretion does not meet the standard of "reasonableness", and it would be very difficult to establish that the responsible authority exercised its discretion unreasonably if it were to exercise discretion to require a new environmental assessment. Environmental standards change over time, as do cumulative impacts. In addition, the conditions present at the time of previous environmental assessments will always be different, in light of the passage of time.

However, it does not appear to us that the Exclusion List Regulations give any kind of discretion to a responsible authority to determine whether the previous environmental assessment was adequate and whether a new environmental assessment can be required. The Exclusion List Regulations say plainly and clearly that if the proposed operation of an existing physical work is the same as the operation for which an environmental assessment was previously conducted, no environmental assessment is required.

In respect of the proper interpretation of the provisions of the Act and its regulations, responsible authorities do not have any discretion. The appropriate standard of review by a Court is correctness.

The test to be applied in considering whether the water licence renewals are excluded from environmental assessment pursuant to section 2 of Schedule I of the Exclusion List Regulations is whether the proposed operation of an existing physical work is the same as the operation for which an environmental assessment was previously conducted. This is a question of fact involving a comparison of the proposed operation to the previously approved one.

The Project Description indicates priorities to be carried out during the timeframe of the new licences which include, as a first priority, to continue the care, maintenance and protection of the property and the environment. While the Project Description discusses the repair and upgrading of various components of the system, for the most part it involves the continuation of previous basic requirements.

Certain items listed in Section 2.1.3 of the Project Description are stated to require changes to the water licence terms. These include a new landfill operated to current design standards, removal of unnecessary buildings, the design of a bio-remediation cell and the consolidation of piles of fines. Even with these features, which are acknowledged to require changes to the licence, we believe there is support in decided cases for the position that the proposed operation of the physical work is "the same" as the one for which an environmental assessment screening was

previously conducted, within the meaning of section 2 of Schedule I of the Exclusion List Regulations.

Hamilton-Wentworth (Regional Municipality) v. Canada (Minister of the Environment), a 2001 Federal Court of Appeal decision,[1] is authority for taking a liberal view of "sameness" in determining whether a project is the same as one for which an environmental assessment was previously carried out. The *Hamilton-Wentworth* case was decided under Subsection 74(4) of the CEAA, the transitional provisions of the Act. Subsection 74(4) provides as follows:

> *74(4). Where the construction or operation of a physical work or the carrying out of a physical activity was initiated before June 22, 1984, this Act shall not apply in respect of the issuance or renewal of a licence, permit, approval or other action under a prescribed provision in respect of the project unless the issuance or renewal entails a modification, decommissioning, abandonment or other alteration to the project, in whole or in part.*

This test is not worded in precisely identical fashion to the "sameness" test provided for in section 2 of Schedule I of the Exclusion List Regulations. However, although different words are used, the essence of the inquiry is identical.

In *Hamilton-Wentworth*, the Federal Court of Appeal held that not all changes to a project that has been previously assessed amount to a modification or other alteration to the project in whole or in part so as to bring the project back into the CEAA. The Red Hill Creek Expressway was the project in issue. It had been studied since the 1950's and assessed earlier under the Ontario Environmental Assessment Act. Over the years, certain changes had been made to the project. Specifically, there had been numerous route realignments, fewer crossings were to be ultimately constructed than had been earlier proposed and a natural channel design for creek crossings had been added. It was determined that the changes were of such a "minor significance in relation to the project as a whole" that they did not constitute a modification or alteration to the projects. Second, the Court considered the fact that that these changes were made, in part, to mitigate the impact of the expressway upon the natural environment and would, in fact, be mitigating measures. For the foregoing reasons, it was held that the changes to the project did not constitute modifications or alterations for the purposes of s.74(4) of the CEAA.

Thus, there is judicial support for the position that the changes included in the Project Description do not amount to modifications or alterations to the operation of the existing physical works, and that the proposed operation is "the same" as the operation previously assessed. The focus of the inquiry should be on "the operation", and not necessarily on the new features included in the Project Description. If the operation proposed is to be the same as the operation in place during the previous assessments, or if any changes are minor compared to the project as a whole, do not result in an environmental impact that exceeds previously determined permissible standards, and/or are mitigating measures, the water licence renewals should be exempt from environmental assessment.

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[1] [2001] F.C.J. No. 1700 (Richard, C.J. and Linden and Evans JJ.A.) (hereinafter "*Hamilton-Wentworth*") at paras. 6 and 7.

The suggestion that closure planning should be part of an environmental assessment in connection with any water licence renewals presumes that there is authority for conducting an environmental assessment in connection with the renewal of the water licences. For the reasons outlined previously, that presumption is erroneous. The renewals are exempt from environmental assessment pursuant to the Exclusion List Regulations.

We understand that the Responsible Authorities ("RAs") have taken the position that the "primary undertaking" of the proposed project is "care and maintenance and other site activities" and that this is fundamentally different than the operation of a mine.

The test under section 2 of Schedule I of the Exclusion List Regulations does not invite a responsible authority to define the "primary undertaking". Rather, it directs it to look at the "proposed operation of an existing physical work" to see if it is the same as an operation for which an environmental assessment was previously conducted. Although the difference is a subtle one, the regulations direct the RAs to look at the operation of the physical work that was previously assessed to see if the proposed operation of the assessed physical work is the same. Looked at through this lens, the RAs' determination may well have been different.

The inquiry is essentially a factual one, and it may be helpful if you would provide the RAs with a summary of the ways in which the proposed operations are the same as those which were previously screened and licenced. For the reasons outlined above, we understand that it is more accurate to describe the proposed operation as being the same as the operation of the existing physical work.

Even accepting that it is appropriate to define the primary undertaking of the proposed operation and the RAs' conclusion that the primary undertaking is care and maintenance, the project still is excluded from environmental assessment, albeit under a different section of the Exclusion List Regulations. Section 1 of Schedule I of the regulations excludes the following:

> "The proposed maintenance or repair of an existing physical work."

Thus, even accepting the RAs' assessment of the nature of the project, it should be exempt from environmental assessment under the CEAA.

Alternatively, the Scope of the Assessment Should Be Limited to the New Features Outlined in the Project Description

In the event that the RAs have determined to proceed with an environmental assessment, only the new aspects of the Project Description (the new landfill, the destruction of buildings, the bio-remediation cells and the consolidation of piles of fines) should be subject to environmental assessment screening. These new features are essentially mitigative measures of past (licenced) activities at the site.

The Responsible Authority's Guide published by the Canadian Environmental Assessment Agency provides that once the potential responsible authority has determined that the Act

applies, its next step is to determine the scope of the project for which an environmental assessment is being considered.
The Guide provides as follows:

> *Scope of the Project*
>
> *Under the Act, the RA must determine the scope of the project in a screening or comprehensive study. The scope of the project refers to those components of the proposed development that should be considered part of the project for the purposes of the EA.*
>
> *In determining the scope of the project, therefore, the RA must consider:*
>
> • *which physical works fall within the scope of the project, and which undertakings in relation to those physical works fall within the scope of the project; or*
> • *which physical activities not in relation to a physical work (identified in the Inclusion List regulation) fall within the scope of the project.*

The determination of the scope of the project is made pursuant to section 15(1) of the CEAA, as a precursor to determining pursuant to section 15(3) the scope of the environmental assessment (i.e., which environmental effects are to be addressed).

The Responsible Authority has discretion to determine the scope of the project pursuant to section 15(1). As mentioned previously, with respect to discretionary decisions of substance made pursuant to authority granted under the CEAA, the standard of review is reasonableness.[2] This gives the RAsa high level of discretion with respect to its determinations as to the scope of the project.

In the course of the RAs' determination of the scope of the project under 15(1), we would suggest that each of the new features of the Project Description (i.e. a new landfill, the bio-remediation cell, the destruction of buildings and consolidation of piles of fines) be considered distinct projects on their own, independent of the water licence operations and any closure plans.

In determining the scope of the project to be assessed, the Responsible Authority's Guide suggests the use of a test which involves distinguishing between the principal project and its accessories. According to that test, the principal project (i.e., either the undertaking with respect to physical work or the physical activity) must always be included in the scope of the project. The scope should also include other physical works or physical activities which are accessory to the principal project. The Responsible Authority's Guide suggests two criteria be used in determining what constitutes an accessory to the principal project: interdependence and linkage. If the principal project cannot proceed without the undertaking of another physical work or activity, then that other physical work or activity may be considered as a component of the scoped project. Furthermore, if the decision to undertake the principal project makes the

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[2] *Bow Valley Naturalists Society v. Canada (Minister of Canadian Heritage)* [2001] F.C.J. No. 18 (Linden, Isaac and Sharlow, JJ.A.) at para. 55.

decision to undertake another physical work or activity inevitable, than that other physical work or activity may also be considered as a component of the scoped project.

An operational policy statement issued by the Agency entitled "Establishing the Scope of the Environmental Assessment" provides that

> "Scoping establishes the boundaries of an environmental assessment (what elements of the project to consider and include and what environmental components are likely to be affected and how far removed those components are from the project)".

The statement recommends that the following be considered when determining the scope of the project:

1. The description of the project (what is the project and is it the principal project?).

2. Justification for the project (what is the purpose of the project and why is it proposed?).

3. Other physical works which are inevitable or physically linked to or are inseparable from the proposed projects.

4. Whether the proposed project is or has been the subject of an assessment of environmental effects by others, such as other environmental assessments; and

5. Whether other review processes have occurred or are occurring, and their results.

The Responsible Authority does have a discretionary power to combine two or more projects to which the Act applies into the same environmental assessment if it determines that the projects are so closely related that they can be considered to form a single project. This may be applicable to the four new features referred to in the Project Description, and should not pose any practical difficulties, provided that issues related to closure planning are not included.

It is important to be able to demonstrate to the RAs that the four new features referred to in the Project Description are not interdependent or linked to closure issues or even the renewal of the water licences, and that they are free-standing projects that would be unaffected by any decisions relating to closure or the licences. To the extent they are mitigation measures regardless of whether the mines operate or are closed, they can be separated from closure issues under the Responsible Authority's Guide, and the closure is not inevitable as a result of or inseparable from the four new features.

Recent case law lends support to this position. It suggests that with respect to an expansive or long-term project, it is acceptable for different components of a long-term project to have separate assessments, without requiring a subsequent assessment of the expansive project as a whole

In *Bow Valley Naturalists Society v. Canada (Minister of Canadian Heritage)*,[3] in issue was a proposed redevelopment of the Chateau Lake Louise in Banff National Park. The redevelopment was based on a long-range plan that would see several steps in the overall project. It involved a proposal by Canadian Pacific Hotels ("CP") to develop a meeting facility at the Chateau Lake Louise in Banff National Park. CP's long range plan envisioned several future developments and many mitigation measures. It included five components: the meeting facility, swimming pool and spa restoration, Tom Wilson room conversion, staff housing, and an additional level to the existing parkade. All of the steps that were proposed were interrelated, impacted on the same physical environment and were, in fact, pieces of the larger project relating to the Chateau. Despite this inherent interconnection, the Court did not take issue with the Responsible Authority's determination that each additional component of the long-range plan would receive its own assessment and did not interfere with what it considered to be the reasonable discretion of the responsible authority in determining the scope of the assessment.

In the case of *Manitoba's Future Forest Alliance v. Canada (Minister of the Environment)*[4], construction of a bridge was at stake. The proponent of the project was also undertaking the conversion and expansion of an existing pulp mill, the construction of a new pulp mill, the construction of hundreds of kilometres of logging roads and other related forestry activities. The approval was challenged on the basis of the narrow scoping of the project. The Federal Court Trial Division found that the Responsible Authority is required under Section 15(3) to assess not just those undertakings proposed by the proponent but also those which were likely to be carried out in relation to the bridge. It concluded that the scope of the project did not need to include the forestry operations, the pulp mills or the construction of the new roads, because they were not undertakings related to the bridge or likely to be carried out in relation to the bridge. Thus, the case supports a narrow interpretation of what is "in relation to" a particular physical work.

A broader interpretation was applied in *Friends of the West Country Association v. Canada (Minister of Fisheries and Oceans)*[5], where the issue was the construction of two bridges which were part of a proposed mainline road to bring logs to a mill. The Court found that the Responsible Authority could include in the scope of the project undertakings in the life cycle of the main project under the assessment which are ancillary or subsidiary to that physical work. However, this decision was persuasively criticized in the *Manitoba's Future* case, with the Court there holding that the construction of two bridges does not make a road connecting them physically inevitable.

Closure Planning Should be Excluded from the Scope of the Project because its Inclusion would Delay the Screening

In addition, if there must be a screening, the scope of the project for the purpose of the screening should be defined to exclude closure considerations for the simple reason that to include closure planning in the screening would be impractical because of a lack of knowledge of site conditions and the need to address closure criteria. In order to adequately assess the environmental effects

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[3] Supra, note 1 at paras. 57 and 58.

[4] (1999), 30 CELR (N.S.) 1(FCTD), Appeal discontinued October 2000

[5] [2000] 2 F.C. 263 (C.A.). Application for Leave to Appeal to the Supreme Court of Canada dismissed, [1999] S.C.C.A. 585

of existing site conditions and address closure criteria, field studies will be required, and these will take time. It is not practicable for closure planning to be screened before the water licences expire (particularly in light of the upcoming devolution of authority from DIAND to the Yukon Territorial Government).

Section 11(1) of the CEAA provides that where an environmental assessment of a project is required, the responsible authority shall ensure that the environmental assessment is conducted as early as is practicable in the planning stages of the project and before irrevocable decisions are made.

To include closure planning in the scope of the project to be screened would delay the screening, contrary to the provisions of Section 11(1). Furthermore, it would likely lead to an intolerable situation of non-compliance.

Summary

As discussed in detail above, the water licence renewals are exempt from environmental assessment by virtue of section 2 of Schedule I of the Exclusion List Regulations under the CEAA, because the proposed operations, even with the new features proposed, are essentially the same as the operations that were previously the subject of screenings. This is supported by case law which holds that minor changes and changes made for the purpose of mitigating environmental effects do not mean that the proposed project is different. Even if the operations are described as primarily care and maintenance, then they are exempt pursuant to section 1 of Schedule I of the Exclusion List Regulations.

Alternatively, if there must be a screening, the scope of the project subject to the screening should be defined narrowly, to include only the new features in the Project Description, and should not include closure considerations and uncertainty regarding the environmental effects of pre-existing conditions, since the new features outlined in the Project Description are neither interdependent with nor linked to closure planning. There is ample support for upholding a discretionary decision by DIAND to define the scope of the project narrowly.

Furthermore, the water licence renewal applications should be assessed separately from closure plans because to include the latter considerations would be impractical and cause delay, which is inconsistent with the requirement of the Act that environmental assessments be conducted as early as is practicable.

Please feel free to contact us if you have any questions or wish us to explore further any of the matters addressed in this letter.

Yours truly,

Heenan Blaikie LLP

Barry M. Weintraub

CANADA - YUKON AGREEMENT ON ENVIRONMENTAL ASSESSMENT COOPERATION

WHEREAS Canada and Yukon are both signatories to *A Canada-Wide Accord on Environmental Harmonization* (the Accord) and its *Sub-agreement on Environmental Assessment* (the Sub-agreement);

WHEREAS Canada and Yukon respect each other's jurisdiction, including a shared responsibility for the environment;

WHEREAS Canada and Yukon believe that their established processes for environmental assessment, which operate in a framework of legislation and government policies, can be exercised in a cooperative and coordinated manner;

WHEREAS Canada and Yukon have agreed that when an environmental assessment for a project is required by Canada pursuant to the *Canadian Environmental Assessment Act* and an environmental assessment is required by Yukon pursuant to the *Environmental Assessment Act*, a cooperative environmental assessment will be undertaken to generate the type and quality of information and conclusions on environmental effects required by all Parties making decisions on the basis of the cooperative environmental assessment;

THEREFORE, Canada and Yukon agree to implement the Sub-agreement through the following provisions.

DEFINITIONS

In this Agreement,

"cooperative environmental assessment" means the environmental assessment of a project where Canada and Yukon have an environmental assessment responsibility and they cooperate through the lead party's assessment process to meet the legal environmental assessment requirements of both parties through a single environmental assessment,

"environmental assessment" means an assessment of the environmental effects of a project conducted by Canada in accordance with the *Canadian Environmental Assessment Act*, or by Yukon in accordance with the *Environmental Assessment Act,*

"environmental assessment responsibility" means the powers, duties or functions, the exercise of which requires an environmental assessment, in accordance with the *Canadian Environmental Assessment Act*, or in accordance with the *Environmental Assessment Act*, as the case may be,

"implementing office" means the office designated by the Yukon under clause 7 or the office designated by Canada under clause 8, as the case may be, and **'implementing offices'** means both offices,

"interest" means the environmental management responsibilities of a party related to a project, the exercise of which does not require a legislated environmental assessment,

"joint review panel" means a panel established by Yukon, pursuant to the *Environmental Assessment Act*, and by Canada, pursuant to the *Canadian Environmental Assessment Act*, the members of which are appointed by Canada and Yukon,

"lead party" means the party as determined under clause 5.6.0 of the Sub-agreement and clauses 30, 31 and 32 of this Agreement,

"party" means either the Government of Yukon or the Government of Canada and 'parties' means the Government of Yukon and the Government of Canada,

"project" means a project as defined in subsection 2(1) of the *Canadian Environmental Assessment Act* or as defined in subsection 1(1) of the *Environmental Assessment Act.*, as the case may be,

"project administration team" means a team made up of senior representatives of Canada and Yukon with an environmental assessment responsibility with respect to a project and in the case of a federal comprehensive study, includes a representative of the Canadian Environmental Assessment Agency, and

"responsible authority" has the same meaning as in subsection 2(1) of the *Canadian Environmental Assessment Act* or as in subsection 1(1) in the *Environmental Assessment Act*, as the case may be.

OBJECTIVES OF THE AGREEMENT

1. The objectives of this Agreement are:

   a) to foster cooperation between Canada and Yukon concerning the environmental assessment of proposed projects;
   b) to achieve greater efficiency and the most effective use of public and private resources where environmental assessment processes involving both parties are required by law; and
   c) to establish accountability and predictability by delineating the roles and responsibilities of the Canada and Yukon.

INTERPRETATION

2. This Agreement is entered into in support of the spirit and intent of the Sub-agreement and the Accord.

3. This Agreement shall be interpreted in a manner consistent with federal and territorial legal requirements, including but not limited to legislative requirements.

4. The right of either party to carry out its legal responsibilities and obligations is recognized and this Agreement creates no legal obligations on the parties.

5. This Agreement does not in any way affect or limit the jurisdiction or any rights, powers, privileges, prerogatives or immunities of Canada or Yukon.

IMPLEMENTING OFFICES

6. Each party will designate an implementing office to be responsible for the implementation and administration of this Agreement. The implementing office's responsibilities shall include:

   a) coordinating, as needed, administrative matters pertaining to this Agreement
   b) facilitating consultation and cooperation between the parties in relation to projects under environmental assessment review;
   c) providing information about their respective environmental assessment processes, policies, and procedures;
   d) coordinating and facilitating federal - territorial contact and communication on general environmental assessment matters with potential proponents, other government departments and agencies, the public and First Nations communities;
   e) developing joint operational guidelines, as needed, for matters pertaining to this Agreement; and

f) keeping a directory of the names of those who have been assigned, by each party, to assist in the administration or review of a cooperative environmental assessment and making this information available on request.

7. Yukon's implementing office will be the Development Assessment Unit, Executive Council Office in Whitehorse.

8. Canada's implementing office will be the Canadian Environmental Assessment Agency office in Vancouver.

9. The implementing offices will jointly implement and administer this Agreement. They will consult as required to monitor the efficiency and effectiveness of the Agreement, and to review comments on the operation of the Agreement that may be received from time to time and regularly discuss the implementation of the Agreement.

10. The implementing offices shall endeavor to agree on the interpretation and application of this Agreement and will make efforts, through cooperation and consultation, to resolve disputes.

11. The implementing offices will not be responsible for conducting cooperative environmental assessments of individual projects carried out under this agreement. This responsibility will rest with the federal and territorial responsible authorities.

Preliminary Consultations

12. The parties will advise proponents about the potential for a cooperative environmental assessment at the earliest opportunity.

13. Where a party learns of a prospective project that might be subject to a cooperative environmental assessment, that party will provide information on the project to the other party's implementing office.

14. The party receiving information provided as referred to in clause 13 of this Agreement will identify, in a timely manner, the information that will likely be needed by that party to determine its environmental assessment responsibilities and the extent to which that party may wish to participate in further consultations with the proponent.

15. The parties will consult and work with each other and proponents as early as possible to ensure that the preliminary information needed to identify a parties' environmental assessment responsibilities is addressed in the development of any subsequent submission.

16. Each party will include the other party's information needs in the advice that it provides to proponents regarding any subsequent submission.

17. Where Canada intends to develop a model class screening report pursuant to the *Canadian Environmental Assessment Act,* and the result will affect subsequent projects in Yukon, Canada will notify Yukon early in the process of developing the report and will provide Yukon with an opportunity to participate in the process of developing the report.

18. Where Yukon intends to develop a model class screening report pursuant to *Environmental Assessment Act*, Yukon will notify Canada early in the process of developing the report and will provide Canada with an opportunity to participate in the process of developing the report.

NOTIFICATION AND DETERMINATION OF PARTIES PARTICIPATING IN AN ENVIRONMENTAL ASSESSMENT

Sharing Information

19. The parties shall notify each other about projects that will potentially be subject to their respective environmental assessment processes in a manner that ensures timely disclosure and access to relevant information about the projects.

20. For projects in Yukon subject to the *Environmental Assessment Act* that are also projects as defined in subsection 2(1) of the *Canadian Environmental Assessment Act*, the territorial responsible authority will inform Yukon's implementing office and that office will ensure that any project description documentation is provided to Canada's implementing office at the earliest possible opportunity.

21. For projects in Yukon subject to the *Canadian Environmental Assessment Act* that are also projects as defined in subsection 1(1)of *Environmental Assessment Act*, the federal responsible authority will inform Canada's implementing office and that office will ensure that any project description documentation is provided to Yukon's implementing office at the earliest possible opportunity.

22. The parties may agree, in writing, that the notification requirements referred to in clauses 20 and 21 are not required for certain types of projects or categories of projects

Determining Environmental Assessment Responsibilities

23. The parties agree to determine, as soon as is practicable and within any time frames that may be established in relevant legislation or policy, whether they have an environmental assessment responsibility in relation to the project.

Giving Notice About Environmental Assessment Responsibilities

24. The parties will notify each other of their respective determinations as soon as possible after determining whether they have or may have an environmental assessment responsibility for a project.

25. If either party believes that it has an environmental assessment responsibility, but the project proposal or description lacks sufficient information to make a final determination, that party will:

    a) document the additional information required;
    b) provide this documentation to the other party to ensure that the information needed in order to make a determination is obtained ; and
    c) participate in the environmental assessment in accordance with (a) and (b) above until it has made a determination respecting its environmental assessment responsibilities.

COOPERATIVE ENVIRONMENTAL ASSESSMENT

26. Where both parties have an environmental assessment responsibility for a proposed project, a cooperative environmental assessment will be undertaken.

27. The cooperative environmental assessment will be administered by the lead party in a manner that enables both parties to meet their legal and technical requirements and that ensures that the cooperative environmental assessment:

    a) generates the type and quality of information required to meet the legal environmental assessment requirements of each party; and
    b) provides findings on the environmental effects of the proposed project required for decision making by the respective parties.

28. The parties shall endeavor to agree on the interpretation and application of this Agreement and will make every effort, through implementation, planning, cooperation and consultation to resolve disputes. On an individual assessment basis, this function will be the role of the project administration team.

29. Where, despite the best efforts of the project administration team, a party concludes that one or more of their legal information or process requirements is not being met, that party will document its requirements in relation to its legal responsibilities, provide this documentation to the other party and declare its intention to collect this information independently. While in the process of independently collecting the information, that party will continue to participate in the cooperative environmental assessment. If the additional information collected is available prior to the conclusion of the cooperative environmental assessment, it will be integrated into the cooperative environmental assessment decision making; otherwise, the party that collected the information will use it solely for its decision making.

Single Contacts

30. Each party will identify a single contact person, capable of fulfilling the responsibilities set out in clause 31 of this Agreement, for the cooperative environmental assessment or phases of the assessment and will communicate this promptly to the other party.

    a) Yukon's contact will be Yukon's implementing office until such time as a lead territorial responsible authority has been identified. When identified, the responsible authority shall designate a contact person who will be the point of contact for Canada for subsequent stages of the cooperative environmental assessment; and
    b) Canada's contact will be Canada's implementing office until such time as a lead federal responsible authority has been identified. When identified, the responsible authority shall designate a contact person who will be the point of contact for Yukon for subsequent stages of the cooperative environmental assessment.

31. Each party's contact will:

    a) coordinate that party's participation in the cooperative environmental assessment;
    b) work with the other contact to resolve process and content issues that may arise during the cooperative environmental assessment;
    c) ensure effective consultation with the other party, the proponent and the public on matters pertaining to the cooperative environmental assessment; and
    d) endeavor to ensure that the party meets any timelines established for the cooperative environmental assessment.

Determining Lead Party

32. The lead party for the purposes of the cooperative environmental assessment will generally be determined as follows:

    a) Canada will be the lead party for projects proposed to occur on federal lands, as defined in the *Canadian Environmental Assessment Act*, where federal approvals/authorizations are required to enable the project to be carried out in whole or part;
    b) Yukon will be the lead party for projects proposed to occur on lands within its territorial boundary, not covered under clause 32 (a) of this Agreement, where territorial approvals/authorizations are required to enable the project to be carried out in whole or part ; and
    c) for any project not covered under clause 32(a) or 32(b) of this Agreement and for which a cooperative environmental assessment is undertaken, the lead party will be determined by mutual agreement of the parties, taking into account the criteria in clause 34 of this Agreement.

33. If a party believes that it would be in the best interest of a cooperative environmental

assessment to vary the lead from the arrangements described in clause 32 of this Agreement, that party shall notify the other party. A decision to vary the lead must be agreed to by both parties.

34. In the notice referred to in clause 33 of this Agreement, the notifying party will provide its rationale for suggesting a variance based on an evaluation of any of the following criteria:

a) scale, scope, and nature of the environmental assessment;
b) capacity to administer the assessment including available resources;
c) physical proximity of the government's infrastructure
d) effectiveness and efficiency;
e) access to scientific and technical expertise;
f) ability to address client or local needs;
g) extra-territorial, provincial, inter-territorial, or international considerations; or
h) existing regulatory regime, including the legal requirements of quasi-judicial tribunals, and
i) any other criteria deemed relevant by the notifying party

Project Administration Team

35. The lead party will, unless otherwise agreed for certain projects or classes of projects, establish and chair a project administration team.

36. As required, the project administration team will consult with a technical advisory committee made up of advisors from the respective administrations to provide advice to the project administration team in order to meet its responsibilities.

37. The project administration team will be responsible for managing the cooperative environmental assessment, by

a) coordinating public participation in the cooperative environmental assessment pursuant to clause 38 of this Agreement;
b) coordinating consultation between the parties, the proponent and the public on matters pertaining to the cooperative environmental assessment;
c) establishing a mutually agreeable schedule for the cooperative environmental assessment pursuant to clauses 40 and 41 of this Agreement;
d) setting the information requirements for assessing the environmental effects of the project pursuant to clauses 43, 44, and 45 of this Agreement;
e) ensuring that the information pertaining to the environmental effects of the project is analyzed pursuant to clause 46 of this Agreement;
f) assessing the completeness and adequacy of the environmental assessment information and discussing the findings of the cooperative environmental assessment report and any proposed recommendations with decision makers; and,

g) coordinating, to the extent possible, the timing of environmental assessment decisions and the announcement of such decisions, pursuant to clauses 54, 55, and 56 of this Agreement

Determination of the Need for Public Participation

38. The parties will coordinate the timing of their determination for the need for public participation. Each party will determine its need for public participation in as timely a way as possible for the cooperative environmental assessment and will communicate this need to the other party. If both parties determine that public participation is appropriate, they will consult on the establishment of a joint process.

39. Detailed provisions for the establishment and conduct of the joint review panels are provided in clauses 47 to 53 .

Cooperative Environmental Assessment Schedule

40. Once the project administration team has established a schedule for the cooperative environmental assessment, the lead party will provide the proponentwith a copy of this schedule.

41. If a schedule must be altered, the lead party will consult and reach agreement about the change(s) with the Project Administration Team and discuss the change(s) with the proponent.

42. Where an amended schedule would affect the opportunity for public involvement, the public will be advised by the lead party of the revisions to the schedule, along with an explanation for the changes.

Setting the Environmental Assessment Information Requirements

43. Where further environmental assessment information is needed to complete the cooperative environmental assessment, the project administration team will consolidate the information requirements of both parties into a single request for information. Requests for information are intended to guide the proponent in preparing the environmental assessment information for the cooperative environmental assessment.

44. For the purposes of developing the environmental assessment information requirements, the definitions of "environment" and "environmental effects" will be adopted from both the *Environmental Assessment Act* and the *Canadian Environmental Assessment Act* to ensure the requirements of both parties are met.

45. Once the request for environmental assessment information has been agreed to by the project administration team, the lead party will issue the request to the proponent.

Determining Completeness of the Environmental Assessment Information

46. The parties, through the project administration team, will review the environmental assessment information submitted by the proponent to determine its completeness and adequacy. In this regard:

    a) the parties will each identify whether additional information is needed to meet their respective decision-making needs;
    b) if information deficiencies are identified by the parties that would prevent the cooperative environmental assessment from proceeding, the lead party will consolidate the deficiencies into one document; and
    c) the lead party will issue the agreed upon consolidated deficiency document to the proponent.

Joint Review Panels

47. For a cooperative environmental assessment, when Yukon or Canada has determined that the project should be referred to a review panel pursuant to the *Environmental Assessment Act* or the *Canadian Environmental Assessment Act*, as the case may be, it shall provide immediate notice of that decision to the other party and consult on the possible establishment of a joint review panel for the project.

48. As early as possible in the cooperative environmental assessment of a project for which a joint review panel will be established, the parties will enter into a project specific agreement to establish the joint review panel and set terms of reference for its operation including membership, cost sharing arrangements, provisions for cost recovery if applicable, assistance to be provided to participants in the hearing process if applicable, participation by potentially affected First Nations, and any other matter as directed by the requirements of federal and territorial legislation and this Agreement.

49. Where a joint review panel secretariat is established, the panel secretariat will be Canada's and Yukon's single contact for the panel.

50. All documents produced by a joint review panel, including its final report, will take account of and reflect the views of all the members of the panel.

51. The joint review panel's final report shall be conveyed to the parties as recommendations only.

52. In considering the recommendations of a joint review panel, Canada and Yukon agree not to exercise any power, duty or function in respect of the project prior to the parties discussing the panel's findings and recommendations.

53. Any decisions made by Canada or the Yukon respecting participant or intervenor funding will, to the extent practicable, consider the views of the other party respecting such funding.

Recommendations to Decision Makers and Coordination of Decisions

54. Each party having an environmental assessment responsibility will use the information generated by the cooperative environmental assessment for the purposes of their respective decision making, provided that each party is of the opinion that the information generated in the process meets the requirements of its environmental assessment legislation.

55. Upon completion of a cooperative environmental assessment, each party will notify the other of the timing and content of the Responsible Authorities' decisions and provide an opportunity to coordinate the announcement of such decisions.

56. To the extent possible, neither party will communicate its decision directly to the proponent or the public without prior notification of the other party.

Follow-up

57. Where a cooperative environmental assessment results in the approval of a project, the parties agree to communicate and to coordinate any follow up responsibilities of Canada and Yukon, where the parties agree that it would be mutually advantageous to do so.

ABORIGINAL CONSIDERATIONS

58. The parties recognize the protection provided for the aboriginal and treaty rights of the aboriginal peoples of Canada by the recognition and affirmation of those rights in section 35 of the *Constitution Act, 1982.*

59. Where a project subject to a cooperative environmental assessment has the potential to cause adverse environmental effects, the parties will notify any potentially affected First Nations , so they may participate in the cooperative environmental assessment, as provided for by the *Canadian Environmental Assessment Act,* the *Environmental Assessment Act* and the regulations made pursuant to those Acts, or in accordance with Interim Measures pursuant to Chapter 12.3.6 of the Umbrella Final Agreement.

ACCOMMODATING INTEREST

60. Where a party identifies its interest in a project to the party that has an environmental assessment responsibility for the project, the party with the responsibility will provide opportunities for the party with an interest to provide input, as appropriate, on the project, including the review of the environmental assessment information related to the project

61. Nothing in this Agreement is intended to limit the opportunities established in the *Canadian Environmental Assessment Act* or the *Environmental Assessment Act* for either party to access information or provide input on a project.

62. Where one party has an environmental assessment responsibility for a project, the other party agrees to provide expertise to the party with the environmental assessment responsibility, subject to resource limitations and receiving a written request for such information,. The expertise provided may include reviewing the environmental assessment information.

ACCOMMODATING TRANSBOUNDARY CONCERNS

63. Where Canada has obligations pursuant to an international agreement concerning the environmental assessment of a project subject to a cooperative environmental assessment, Canada will notify and discuss its obligations with Yukon to ensure that the obligations associated with the cooperative environmental assessment and the international agreements are met.

63. For any project in Yukon which is subject to a cooperative environmental assessment and that has the potential to cause significant adverse environmental effects in another province or territory in Canada, the potentially affected province or territory shall be notified and invited by the lead party to take part in the cooperative environmental assessment of the project.

64. Where a project occurring outside Yukon is subject to an environmental assessment under the *Canadian Environmental Assessment Act* and the project may potentially cause significant adverse environmental effects in Yukon, Yukon will be invited by Canada to take part in the environmental assessment of that project. This requirement will not apply where Yukon has concluded an agreement with another province or territory which will result in notification to Yukon about the project and an opportunity for them to participate in the environmental assessment prior to its completion.

REVISION AND DURATION OF AGREEMENT

66. The parties agree to undertake periodic reviews of the implementation of this Agreement, including the effectiveness in fostering cooperation between the parties and in meeting the objectives of this Agreement.

67. This Agreement may be revised, in writing, at any time by mutual consent.

68. This Agreement will be in force until such time as legislation enacted pursuant to Chapter 12 of the Umbrella Final Agreement is fully implemented and all cooperative assessments under this agreement have been completed. If such legislation has not been implemented within five years from the date of the execution of this Agreement, then this Agreement will either be renewed by mutual agreement or terminated.

69. Prior to the expiration or renewal of the Agreement, the parties will evaluate the Agreement and their performance in relation to it. The evaluation will include opportunities for public consultation as required.

70. Following consultation between the parties, this Agreement may be terminated by either party forty-five days after written notice is provided to the other party. In the event of termination, the parties will establish transitional arrangements for projects already subject to a cooperative environmental assessment.

SIGNATURES

This Agreement is entered into pursuant to s.58 of the *Canadian Environmental Assessment Act* and s.46 of the *Environmental Assessment Act.*

Signed on behalf of Canada by the
Honourable David Anderson
Minister of Environment

_____
David Anderson

Signed on behalf of Yukon by the
Honourable Pat Duncan
Minister of Executive Council

_____
Pat Duncan

Signed on behalf of Canada by the
Honourable David Anderson,
Minister of the Environment.

_____
David Anderson

Signed on behalf of Yukon by the
Honourable Pat Duncan,

Minister of the Executive Council

Pat Duncan

COPY

Heenan Blaikie LLP

LAWYERS – PATENT AND TRADE MARK AGENTS

COUNSEL
† *The Right Honourable Pierre Elliott Trudeau, P.C., Q.C. (from 1984 to 2000)*
The Honourable Donald J. Johnston, P.C., Q.C. (from 1974 to 1996)
Pierre Marc Johnson, F.R.S.C.
André Bureau, O.C.
Pierre C. Lemoine

Barry M. Weintraub
Direct Line (416) 360-3565
email: bweintraub@heenan.ca
File No. 021558-0017

May 14, 2003

BY FACSIMILE (819) 953-2590

Department of Indian Affairs and Northern Development
10 Wellington Street
Hull, Quebec K1A OH4

Attention: Ms. Sarah Kalff – Environment & Renewable Resources Directorate

Dear Sirs & Madams:

Re: Deloitte & Touche Inc., Interim Receiver of Anvil Range Mining Corporation
Environmental Assessment of Water Licence Renewal Application

Further to our productive conference call yesterday morning, we are writing on behalf of Deloitte & Touche Inc. as the Interim Receiver of Anvil Range Mining Corporation to confirm our understanding that the Department of Indian Affairs and Northern Development ("DIAND") is aware of the need to formally ensure that the environmental assessment requirements under Section 5 of the *Canadian Environmental Assessment Act* ("CEAA") in respect of the Anvil Range water licence renewal application are fulfilled.

As you know, the *Yukon Environmental Assessment Act* ("YEAA") is now in force as legislation mirroring CEAA in Yukon and an environmental assessment screening of the project will be carried out under that legislation. Nevertheless, in light of the DIAND funding for the Interim Receivership, it is our view that DIAND is still a responsible authority pursuant to CEAA and its responsibilities in that regard must be formally fulfilled. We are pleased that this also appears to be DIAND's view.

Section 12(1) of CEAA provides that where there are two or more responsible authorities in relation to a project, they shall together determine the manner in which to perform their duties and functions under the Act and Regulations. Section 12(4) of CEAA permits DIAND as a responsible authority to co-operate with a responsible authority under YEAA.

COPY

We understand that it has been agreed that the latest draft of the Canada-Yukon Agreement on Environmental Assessment Co-operation (the "EA Co-operation Agreement") will be applied to the environmental assessment processes under CEAA and YEAA to facilitate a co-operative Yukon-Canada environmental assessment process, with a view to having a single environmental assessment screening that will take into account the factors and information required by both Canada and Yukon. As discussed in our conference call, under the EA Co-operation Agreement Yukon is to be the Lead Party in respect of the process, and we are pleased to confirm your advice that DIAND will be appointing a contact person for the co-operative Yukon-Canada environmental assessment screening **by May 20, 2003**. This positive step is helpful in view of the May 29, 2003 due date for comments on the YEAA Environmental Assessment Report.

We also understand from our discussion yesterday that it is the common intention of Canada and Yukon to use the information generated by the co-operative environmental assessment in their decision making to avoid any unnecessary and expensive duplication and delay in the screening process and conflicting results. This too is a positive step.

In order to ensure that the process is not susceptible to attack on a judicial review application, as discussed in our conference call yesterday, we would urge DIAND to take the necessary steps to formally exercise its discretion to co-operate with the territorial authority pursuant to s. 12(4) of CEAA and, upon completion of the co-operative screening, take one of the courses of action set out in Section 20(1) of CEAA in respect of the project.

Yours truly,

Barry M. Weintraub

BMW/jas

cc: Wes Treleaven, Deloitte & Touche Inc.
Shannon Glenn, Deloitte & Touche Inc.
Robert Lauer, DIAND
Joanna Ankersmit, DIAND
Leslie Gomm, YTG Executive Council Office

Map Search
EHS
1 ARMC Interim Receivership
2 Contact Information
3 EHS, TAC Reports and Data
4 Listing of Final Project & Study Reports
5 eRoom Reference Material
6 Collaboration Area
1. Open Discussion Forum Anvil Range
455-01 Fresh Water Supply Dam (FWSD)
455-02 Environmental Maintenance (ENVMNT)
455-03 Rose Creek Tailings (RCT)
455-04 Renewable Energy (RNNRG)
455-05 Risk Based Management (RBMGT)
455-06 Vangorda Acid Rock Drainage (VARD)
455-07 Vangorda Water Treatment (VWT)
455-09 Water Licence Renewal (H2OLR)
1. RFPs
2. Communications
Baseline Table of Contents
Bi-lateral agreement
Comments on EAR
Draft EAR
EAR Guidelines and scope of screening
EAR methodology
EAR Screening report
GLL Communication Records
H20LR-m-030802-Anvil Range_Agenda_April 14 17.doc
H20LR-m-030802-Anvil

Comments on EAR

a note created by Shannon Glenn on 2 Jun 03

The EAR was submitted on April 29, 2003, per attached covering letter. Leslie Go the EAR to her distribution list, per the attached letter on April 30. The comment May 29 2003:

A workshop was held May 13 2003 with the RAs to facilitate/shorten the review pe a forum for the proponent to verbally answer questions regarding the EAR submiss agenda is attached.

Notes from meeting include:
Attendees:

- YTG Environmental Assesment Unit: Ian Church, Leslie Gomm, Ryan,
- YTG Water Resources: Bill Slater
- EC: Benoit Godin
- D&TShannon Glenn, Murray Leitch, Steve Morrison, Eric Denholm
- Type II Project Office: Kirstie Simpson

Issues raised:

- need to look at the long term liability problem
- plan not to increase liability in the long term
- receiving enviroment: use of CCME objectives
- short term solution of fines: technically feasible end result or whatever is closure planning team
- trigger at cross valley dam
- water moving up and down the dam
- intermediate sludge
- p. 5.6: "demonstrable"
- p. 5.10: maintain to initial operating design (rather than upgrade)
- criteria for pit elevation: Vangorda 50% of PMF while Faro is different
- bioremediation: what happens to the leachate. Microbes need to be accep CEPA.
- mimize seepage: in objective of adaptive management
- rose creek: whether it meets the CCME guidelines now
- verificable triggers: add Rose Creek surface water and add change in wildl

In addition, Dave Sherstone was at the meeting at 1 pm. Linkages to the Type II F were discussed. The bulk of the conversation was between Dave Sherstone and B

- YTG will be the major player in the next two years.
- difference between abandonment under DTA and under Water Act: to decl abandonned, a number of criteria have to be met. All parties need to agr DTA.

Range_Workshop Agenda_FEB 20.doc
H2OLR-013003-m-Licensing strategies going forward.doc
Linkage with Project Team
Planning of Open Houses
Project Description Inputs
RERC meetings
Ross River TK for EAR
Vegetation sampling design and agency comments
Water Board Hearing
Water Board Pre-hearing
Weekly Tuesday conference calls, starting July 30
3. Working Papers
4. Interim Reports
5. Discussion Forum
455-10 Faro Water Treatment (FWT)
455-11 Mass Loading Balance (MLB)
455-12 ESA Concentrate Load-out (ESACL)
455-13 Dam Safety Reviews 2002 (DSR'02)
455-14 Emergency Response Plan (ERP)
455-15 ARD study
455-17 Basic Engineering Inputs 2003 (BEI03)
455-18 ARD Monitoring and Lab Studies 2003 (ARD03)
455-19 Faro/Grum/Vangorda Mine Area Technical Studies 2003 (MATS03)
455-20 Faro/Grum/Vangorda Decommission Methods 2003 (MDECOM03)
455-21 Tailing Area Technical Studies 2003 (TATS03)
455-22 Tailings Decommissioning Methods 2003 (TDECOM03)
455-23

- Trusco issue is dead
- Technical workshop and studies that need to go forward in 2003 summer. meeting but affected First Nations are invited.

SG placed a phone call to Leslie Gomm on June 2 2003.
- meeting on May 13: LG writing the minutes up and some minor deliverables will most of which have been addressed in the water licence application. SG apologiz copying LG on application and will send copy.
- LG has received comments from Environment Canada, YTG Water Resources and DFO and Ruth Goddart.
- LG is meeting on the 9th with DFO and others to discuss. Major items are trigge management.
- LG has not heard from Ottawa. Follow-up may be required between Wes and la
- LG met with Faro (Dave Power) and Ross River (Jenny, Jason and John Acklack) of May 26th. Comments from Faro include concern over flooding of drinking wate related identification of human health as a VECC, and the preservation of the her the mine itself.
- LG off with knee surgery next week and will be working from home.

Comments

Comments from WR and EC discussion with Leslie (Shannon Glenn, Deloitte 5 Jun 03 4:16pm)
Discussed the comments from Environement Canada and Water Resources (attach overlap with the comments included in the draft minutes of the meeting held on the EAR (also attached).

It was concluded that the action items for the majority of the comments involved excerpts of changes that were made to Volume I of the EAR when it was revised f licence application.

Action item: D&T/GLL to provide a letter containing all relevant excerpts.

Conference call to GLL re. response to comments on EAR (Shannon Glenn, D Touche, 11 Jun 03 2:41pm)
A conference call was held with GLL (ED and SM) to review draft response prepare regarding the minutes of the May 13 workshop and the comments received to date which were forward to SG by Leslie Gomm.

Both documents were reviewed. ED to make further modification to the letter to whether any additional clarifications need to be provided (by cross-referencing th to the water licence application report in relation to Volume I of the EAR, and by comments from Water Resources and Environment Canada).

A follow-up conversation was scheduled for June 12, 3:30 pm Toronto time to fina LG and left a message enquiring what the ultimate purpose and circulation of our be.

Call from Leslie Gomm (Shannon Glenn, Deloitte & Touche, 12 Jun 03 2:07pn Call from Leslie Gomm on June 12:

- meeting of RAs on June 9. They had copies of the Application to the Wate
- they liked the trigger wording (hoorah!). More monitoring at key stations required.
- mitigation: need more information regarding how closure plan will be deve objectives will be set, etc. The June 24-25 workshop should hopefully pro context.
- response to the 'Companion document to the EAR' was unenthusiastic as q
- both the minutes to the meeting and our response will be in the public re

- Faro/Grum/Vangorda Mine Area and Tailings Closure Alternatives 2003 (CA03)
- 455-24 Waste Rock Dump Water Balance and Quality 2003 (WRD03)
- 455-25 Site Specific Objectives 2003 (SSO03)
- 7 D&T Workspace
- 8 Extranet Manager's Admin
- Recycle Bin

Meeting with Leslie Gomm (Shannon Glenn, Deloitte & Touche, 23 Jun 03 7:
A meeting was held by Shannon Glenn with Leslie Gomm regarding some of the at documents.

Topics discussed included:

- issues discussed at an RA meeting, where three topics of concern to the re triggers, CCME and closure criteria.
- reviewed a letter dated June 22 from the IR to RRDC relating to concerns r RR review of the EAR. Leslie presented SG with a copy of the comments o to the EAR. From a process point of view,LG/SG discussed holding a joint RRDC to discuss and for the IR to write Leslie in response to these commer
- Leslie provided comments from Dave Powers, Town of Faro, verbally. Mos to EA. They have a concern about inundation of wells as a result of failure Creek Dam.

Held a meeting with George Smith, Jason Acklack and Leslie Gomm on June 25 to 22 letter to the Chief regarding preliminary feedback on the EAR received via a pl as well as to go over further input received via the RRDC EAR comments submitte Gomm. The IR committed to providing a clarification letter.

Discussions with Leslie Gomm re. schedule (Shannon Glenn, Deloitte & Touc 21 Jul 03 10:04am)
Sent a letter to Leslie Gomm June 22 2003 re. enquiries from RAs re. EAR (attache

Had a discussion with Leslie Gomm on July 9 2003 prior to the TAC meeting to obt schedule. The results are indicated at Anvil Range TAC July 9 2003.ppt.

Also had a discussion with her on July 16 2003. I gave her an update of the Meeti July 10 2003.doc. I also discussed that Jason had not yet been replaced. Leslie c she will be visiting the Ross River community in early August.

I also gave her an update on the submission of the Information sheet for Quartz M Applications and mentioned that, at the end of that form, where they ask for the impact of the proposed project, I had refered the board to Leslie Gomm.

Question from Environment Canada (Shannon Glenn, Deloitte & Touche, 5 Se
A question was received from Environment Canada regarding the Vangorda water freshwater supply pond. See attached reply.

Attachments

Submission of the EAR letter.pdf	YTG Environmental Assessment Unit Distribution of the EAR April 30 2003.pdf	YTG Water Resources faro draft ear comments may30.doc	Environment Canada - relicencing EAR comments.doc	Leslie Gomm Draft Minutes of May 13 2003 EAR Review Workshop.msg
Faro Licence Meeting Summary.msg	Draft YTG EMR comments.msg	May 13 workshop agenda.PDF	Request to delete draft YTG EMR comments.msg	Files provided to Leslie Gomm on June 23 2003

Response to EAR comments - Leslie Gomm June 22 2003.doc

Anvil Range EAR meeting notes Final Response.doc

Response to EAR comments - RRDC June 22 2003.doc

Fax of June 22 Letter to the Chief.doc

Clarifications re the EAR July 22 2003.PDF

22307-D7-Fig1 RRDCRevision.pdf

Kaska Bi-lateral agreement.PDF

Final comments from Water Resources.msg

oxide fines.msg

Clarifications on the EAR.msg

Yukon
Executive Council Office
Box 2703, Whitehorse, Yukon Y1A 2C6

Environmental Assessment Unit (A-310)
Fax: (867) 667-3216

April 30, 2003

To: RERC Distribution List

Re: RERC Review of the Environmental Assessment Report for the Anvil Range Mine Complex 2003 – 2008 Water Licence Renewal

Attached is a copy of the Environmental Assessment Report (EAR) for the Water Licence Renewal (2003-2008) for the Anvil Range Mine Complex submitted by Deloitte & Touche Inc. in their capacity as Interim Receiver for Anvil Range Mining Corporation. The Environmental Assessment Report was prepared to comply with the EAR Information Guidelines issued to the proponent in March 2003. Yukon Government Departments will be conducting this assessment under the *Environmental Assessment Act (Yukon)* in coordination with Federal Responsible Authorities (DIAND and the Department of Fisheries and Oceans).

The Environmental Assessment Report consists of three (3) volumes: Volume I Project Description, Volume II Existing Environmental Conditions and Volume III Environmental Assessment. Additional copies can be made available upon request.

Please provide comments on the EAR to the Environmental Assessment Unit by 4:30 pm on May 29, 2003. Comments would be appreciated in electronic form. Please contact Leslie Gomm at (867) 456-3865 or email leslie.gomm@gov.yk.ca should you have any questions on this matter.

Sincerely,

Leslie Gomm
Manager, Project Assessment

cc. Shannon Glenn – Deloitte & Touche Inc. letter only
Yukon Water Board

L.G
For File
Comment BAR

Leslie.Gomm

From: Ruth.Gotthardt
Sent: Friday, May 02, 2003 2:16 PM
To: Leslie.Gomm
Subject: RERC Review of the Environmental Assessment Report for the Anvil Range Mine Complex Water Licence Renewal

Our office has completed the review of the heritage resources component for the Anvil Range Mine Complex Water Licence Renewal (2003-2008) Environmental Assessment Report submitted by Deloitte & Touche Inc. The baseline information for heritage resources is quite comprehensive for the present purposes, and we are satisfied that no adverse affects on heritage sites will result from the activities proposed in the EAR.

Minor note on an apparent typo:

Volume 3, Section 3.3.3, first bullet: no additional ground disturbance will be required because ... the ew landfill is proposed to be located on previously *disturbed* land.

Ruth Gotthardt
Heritage Resources
Department of Tourism and Culture
Government of Yukon
Box 2703
Whitehorse, Yukon
Y1A 2C6
Phone: (867) 667-5983 Fax: (867) 667-5377
Email: Ruth.Gotthardt@gov.yk.ca
Web: www.yukonheritage.com

5110-20-023
Anvil Range
P. Basinger

Fisheries and Oceans / Pêches et Océans

Habitat and Enhancement Branch
Fisheries & Oceans Canada
100 – 419 Range Road
Whitehorse Yukon
Y1A 3V1

Your file Votre référence

Our file Notre référence

May 31, 2003

Leslie Gomm,
Environment Directorate
310-300 Main Street
Whitehorse, Yukon
Y1A 2B5

Re: Anvil Range Mine Complex - 2004-2008 Water licence renewal - Environmental Assessment Report

Thank you for providing the above report for our consideration.

Our concerns are similar to those expressed by Environmental Protection, Department of Environment (DOE) in their 30 May 2003, letter respecting this report. While we acknowledge that the Report focuses on the short term care and maintenance of the site, we remain concerned about increased risk to the fisheries resources of Rose Creek, Anvil Creek and potentially the Pelly River through closure delay. These fisheries resources include both non-anadromous fish and chinook salmon.

As the salmon in the Anvil Creek and Pelly River contribute to commercial, subsistence, aboriginal and sports fisheries in Canada and the United States, the effects of the project could potentially extend well beyond the relatively confined project area. Please note also that Canada and the United States have agreed, pursuant to the Pacific Salmon Treaty (as amended Dec. 4, 2002), that:

> 30. In light of the benefits they receive from the salmon originating in their portions of the Yukon River, the Parties agree that:
> (a) salmon should be afforded unobstructed access to and from, and use of, existing migration, spawning and rearing habitats;
> (b) respective water quality standards should be maintained and enforced

DFO acknowledge that the abandonment and reclamation of the overall site will be mitigation put forward in the Screening Report. We concur with DOE that the Project Management Team should come forth with an approach to the closure plan to allow screening of the mitigation.

As DOE has lead responsibility for the pollution prevention provisions of the *Fisheries Act*, we request that you consider their comments in respect of water quality and the management thereof to represent both of our departments.

We also endorse their position in respect of the physical stability of structures and the rated capacity of all diversions, dams, and other structures designed to impound, convey or in any other way control water.

We are of the opinion that the continued care and maintenance of these structures, and of the maintenance of the water quality in adjacent and downstream fish habitats, is essential mitigation for this project.

Thank you for the opportunity to provide input. Please contact Sandra Orban at 393-6730 or orbans@pac.dfo-mpo.gc.ca if you have any questions or if clarification is in any way required.

Yours sincerely

Al von Finster
A/Chief, Habitat & Enhancement
Y & TBR Division

Cc B. Godin, EPS DOE
B. Slater, EA&PS, GY Environment
K. Hayes, YF&WMB
A. Wilson, YSC
S. Klugie/F. Green SFN
D. Toews, Fisheries, GY Environment

Faro LG working file

Yukon
Environment

May 29, 2003

Leslie Gomm
Manager, Program Assessment
Executive Council Office
Environmental Assessment Unit

Re: Review of EAR for the Anvil Range Mine Complex 2003-2008 Water Licence Renewal

Please accept the following comments in reply to your April 30, 2003 request to review the above report. We limited our review of the document to our specific departmental mandates and defer comment on regulatory issues related to water quality and water management to the Water Resources Branch within our Department.

We support the proposed studies on the assessment of terrestrial effects related to the Faro mine complex (Volume 1 Section 10.1) and ask that the Department of Environment receive copies of these studies. The department is also available and in deed, ask for the opportunity to provide input and advice should that be required. As noted in this Section, the gathering and use of traditional knowledge will play an important role in the compilation of information on the pre-mine-site ecosystem and changes that have occurred since that time.

The Conservation Officer in Faro is aware of some instances over the years where wildlife and waterfowl have been found dead in the vicinity of the tailings pond. It would be valuable to have these events documented, the animal retrieved and reported to the CO. Analysis of contaminants in these animals could then be done to determine if in fact uptake of metals and other toxins is occurring at the mine-site, and to what degree.

We have no other comments on the Environmental Assessment Report document as it applies to the care and maintenance provisions for the 2003-2008 term of the proposed licence renewal.

If you have any questions please call me at 667-5409.

Sincerely,

Jon Bowen
Manager, Environmental Assessment
Environmental Protection & Assessment Branch

c. Bill Slater, Water Resources Branch

Leslie.Gomm

From: Jon.Bowen
Sent: Thursday, May 29, 2003 1:57 PM
To: Leslie.Gomm
Cc: Chuck.Hubert; Bill.Slater
Subject: RERC Review of the EAR for the Anvil Range Mine Complex 2003 - 2008 Water Licence Renewal

Leslie,
Please find attached memorandum in reply to your April 30, 2003 request for comments on the above Report.

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renewal.doc (2

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Draft Agenda
Environmental Assessment Workshop
Anvil Range Water Licence Renewal
Room 3A, Elijah Smith Building

9:00	Introductions
9:10	Review and edit of Agenda
9:20	Summary Presentation by Deloitte & Touche
9:45 – 12:00, 2:00 pm and on if necessary (See below)	Discussion of EAR – Issues

1. Project Description
   - Care and maintenance
   - New activities/undertakings
   - Adaptive management program
2. Description of Existing Environment
   - Discussion of general comments/concerns
3. Environmental Effects Assessment
   - VECC selection
   - Methodology
   - Impact Assessment
   - Cumulative Effects Assessment
   - Proposed mitigation

1:00 – 2:00 pm	Discussion on linkages to long term planning/closure with Type II Group (Marg/Dave)
Closing	Next Steps and Deliverables

Provided to Leslie Gomm
June 23 / 2003

DRAFT

Anvil Range Water Licence Renewal
Meeting Notes DRAFT – May 13, 2003

Leslie Gomm	Environmental Assessment Unit, Executive Council Office, YTG
Ryan Parry	Environmental Assessment Unit, Executive Council Office, YTG~~EAU~~
Ian Church	Environmental Assessment Unit, Executive Council Office, YTG ~~EAU~~
Bill Slater	YTG, Environment~~.~~, Water Resources
Benoit Godin	Environment Canada
Shannon Glenn	Deloitte & Touche Inc.
Eric Denholm	Gartner Lee Limited
Steve Morison	Gartner Lee L~~L~~imited
Kirstie Simpson	Energy Mines Resources, YTG

Meeting was initiated at 9:00 with a round of introductions of the participants. The agenda was then reviewed and accepted.

Shannon Glenn then gave a brief overview of the documents submitted as part of the Environmental Assessment Report (EAR).

The following is an informal summary of the ~~major issues that were discussed~~discussion items that occurred at the meeting regarding the EAR. Action items that were requested from the proponent as a result of the discussion are summarized at the end of these meeting notes.

Project Description – Care and Maintenance - Objectives

The Project Description has a list of 8 goals of the care and maintenance objectives, missing is an evaluation of the activities and trying to minimize increases in long term liability. This has tight linkages to the adaptive management approach.

Long term liability needs to be considered as a long term management objective. This should have been made more specific in the definition of the management objectives.

The proponent stated that the global objective of the project is to provide short term mitigation (pending preparation of a Final Closure Plan by the government Closure Project Team) but agreed that it should be made more explicit that short term care and maintenance measures ~~should~~ are to the extent possible designed to not compromise long term solutions and not to cause an increase in the long term liability at the site. Don't want to make the situation worse.

The question was raised whether Rose Creek meets CCME guidelines. The proponent stated that the objective is to meet the licence criteria for effluent discharge. The point was raised that the objective for Rose Creek should be to meet CCME for the protection

of aquatic habitat, as this includes the various contaminant sources (degraded aquifer, effluent and seepage) and their impact on the receiving environment.

It comes back to the main objectives for closure. Should the site be managed to meet CCME during care and maintenance so as to not impede this being met in the long term? It is all about protecting resources. The approach of developing site specific objectives was also discussed as an alternative.

The proponent would like clarification in the wording in the last ~~CEAA~~ environmental assessment for Faro around CCME?

The question as to where CCME would needs to be met was raised.

It was stated by the reviewers that CCME is what we need to go through the environmental assessment.

The proponent stated that they did ~~not go back and question~~ not opt to propose changing the previous licence criteria, assumed that they would continue to be adequate for short term (to 2008) environmental protection for care and maintenance activities~~be the same for this licence~~. This choice was made because the infrastructure of the site as it currently exists is geared towards meeting the licence criteria of the existing licences.

Reviewers stated that those licence criteria apply to all discharges from the site including groundwater (i.e. groundwater at the Cross Valley Dam). Should we then not be meeting licence criteria in the Intermediate Dam, as it discharges to the aquifer?

Project Description – Care and Maintenance – Ongoing Activities

In the EAR it is stated that the water level in the intermediate pond will fluctuate over the years. Reviewers questions whether this was the best given the potential for increase in oxidation products stored in the tailings and impact on increased long term liability. Fluctuating water levels in tailings are not necessarily best. High water will reduce oxidation, low levels will prevent wetting tailings (Int. Pond).

The proponent provided the following clarification on the objectives for the Intermediate Dam. The water level in the intermediate dam varies up and down. This is a function from not having year round treatment but treatment in batches. The fluctuating water levels are not suggested as the "best" long term ~~a~~ means of operation but as the preferred short term (to 2008) management plan~~just a reality of the method of treatment at the site~~. There are competing objectives here. Keeping the water level low versus increases in oxidation. A management decision was made that the overall objective is the maintenance of the water level at a low level. With increased water levels, there is no emergency storage, increased pressures on the dam structure its self and ~~the~~ increased chances of non-compliant water being accidentally released from the pond. The proponent also clarified that the amount of fluctuation is not large.

On page 5-6, the issue of sludge management is discussed. There was some confusion regarding ~~proponent needs to be clarified~~ who raised the idea of putting the sludge in the Intermediate Dam. This may not~~was not~~, as stated in the document, have been requested by Water Resources Officials. This may not be the best option as there may not be the most robust system to treat non-compliant water in the intermediate dam due to the introduction of sludge. This section should be reworded and clarification provided.

The proponent stated that they are open for suggestions as to the preference for disposal of the sludge (pit vs. pond). Disposal of sludge will dependent upon studies done this summer.

In the document it is stated that seepage to North Fork has had "no demonstrable impact on the North Fork". There is evidence of impact. It was suggested that "significant" be used instead of "demonstrable". The proponent agreed to this new wording.

On page 5-10, there is a discussion of the maintenance activities for the Intermediate and Cross Valley Dams. The objective of these maintenance activities needs to be clarified. To maintain at original design standards (?). Specifically, the use of the word 'upgrade' was questionned. The proponent clarified that the maintenance is proposed only to meet original design criteria. No upgrading in relation to original design criteria is proposed.

Regarding page 5-16, the questions as to the different criteria for determining the maximum recommended water levels in the Vangorda and Faro pits was raised. The proponent discussed that the rationale is that the "weak links" and the operational constraints in each of the systems are different. In Vangorda, the weak link is failure of the flume rather than the pit walls. Clarification of this should be provided.

Project Description – Care and Maintenance – Water Management

Regarding the management objective of minimizing clean water entering the site, there are not ~~she does not see~~ any activities that meet this objective. Clarification is required on where in the care and maintenance plan is this objective addressed or whether the objective should be reworded. What activities are being done to proactively minimize the amount of clean water entering the site? Although there are various activities outlined in the project description regarding diversion ditch maintenance etc., linkages to this management objective need to be clarified.

Project Description – Care and Maintenance - New Activities

Questions were raised regarding the proposed work on the low grade stock piles in the mill area. The proponent is planning to cover the oxidized fine grained ARD material. This is a short term / temporary solution and therefore will have some sunk costs associated with it as presently there is no long term closure plan. In doing this, is it not double handling as this material will need to be dealt with in the long term as well?. The possibility of placing them in the Faro pit was raised and whether this option was investigated. From a risk management view, the most obvious solution is to put them in

the pit. The proponent stated that this option would need to be considered in the context of long term closure planning for the Faro pit.

The goal of the work on the oxide fines is to contain short term risks and as such avoid increasing some long term risks.

The proponent was asked to outline the immediate risks associated with these fines.

There are several: wind dispersion and potential contamination of vegetation, puddles in the oxide fines of about ph 1, increased number of people on the site (ATV) who may come into contact with the materials, and ensuring any drainage is contained and treated. With this work there will be double-handling, but it is not a significant cost in the context of the long term closure plan. The proposed work is cheaper than putting it in the pit. It is not the ultimate solution. Fines are relatively small therefore associated costs are not extraordinary. The proponent stated that they should have options for dealing with this issue but this might cause difficulty with the Water Board if there is nothing for them to sink their teeth into.

The proponent feels that the proposed work is the best short term mitigation for the oxide fines.

The proponent was asked to provide an expanded discussion in terms of options for this pile so that it could be done as progressive reclamation. The objective of doing this work should be clarified.

On page 6-12, oxide fines last paragraph, further clarification on this is required.

In the discussion of the bioremediation cell, the Project Description states that excess leachate will be collected, but there is no discussion on what will happen to it. This needs to be clarified.

Environment Canada stated that for the bioremediation process, soil will be inoculated with microbes. Under CEPA Part 6, this type of activity may need authorization or to be done in compliance with the CEPA.

Project Description – Adaptive Management Program

Reviewers felt that for the Rose Creek aquifer, the trigger for action in the adaptive management program is nebulus. In the absence of a trigger that we can hold on to, there is a potential for getting an increase in long term liability if a slug of ground water goes downstream. This will be an expensive problem to fix.

~~The proponent~~Bill Slater stated that the goal of the trigger is to prevent things from getting out of control. The cheapest point of control is at the cross valley dam. The goal is to prevent the horse from getting out of the barn. Contain the results of the problem and minimize long term liability.

In the Adaptive Management Program there are several things that should not be in this section. The last six AMP Events in Table 12, starting with Complete Breach of the Faro Creek Diversion, are accidents and malfunctions and should be removed from this section. It was suggested that the proponent keep items in the AMP that the proponent feel may prevent a breach or likelihood of failure.

Presently CCME is being exceeded in Rose Creek both upstream and downstream of the mine site. There needs to be a trigger added for Rose Creek for action deals with the cumulative effect of the project. Need to put a trigger that is an incremental change. Reviewers will need a number. "You can track how well you're doing on the site based upon water quality at Rose Creek"

The question as to what is the trigger for Rose Creek was raised by the reviewers. CCME or another option is an interim site specific criteria?

It was clarified that a trigger is not regulatory but a trigger for action.

If incremental change is used as a trigger. What is it based on? Is it based on an increase above a base value or a trend that is statistically significant?

Overall, the reviewers felt that the triggers for action in the AMP are vague. Operator and regulator need a quantitative trigger or something that is easy to measure and implement.

Clarification is required for the trigger for the AMP event in the North Fork Rose Creek. Is the trigger for the AMP event in the North Fork of Rose creek a surface or groundwater trigger? For the N. Fork of Rose creek, there are 6 good wells that are monitored in conjunction with surface water quality. This location gives immediate results as the groundwater is shallow.

The question was raised as to whether there is sufficient data for groundwater in the aquifer. It is difficult to look at changes in an environment that is not fully quantified.

The proponent will provide an addition component to the AMP for Rose Creek downstream of the tailings.

The proponent was asked whether there was an AMP event to deal with responses to changes seen by the benthic (density/populations) monitoring or fish monitoring programs. These should be tied into the event for Rose Creek. Benthic is a crude indicator but there is a good history of data collected which provides for good baseline data. As well, there was a question about AMP for wildlife.

One reviewer commented that caution should be used as the more prescriptive the AMP is, the more dangerous it becomes. AMP's are general by nature of what they are intended for.

Has a comparison of contingency plans been done with what is being done in AMP?

With respect to quantitative triggers, the Proponent stated that they have a difference of opinion than the reviewers regarding the need for quantitative triggers. They will provide feedback.

Environmental Effects – Receiving Environment

Regarding groundwater contamination in the receiving environment, the question was raised by the reviewers as to whether the objective is to maintain water quality downstream at CCME.

Misc – Progressive Reclamation

The question of progressive reclamation was raised by the reviewers, specifically does taking A&R planning responsibilities away from the IR preclude any progressive reclamation?

The proponent stated that some of the new activities are geared toward long term closure such as hydrocarbon reclamation and building demolition. With respect to the work on the oxide fines, the goal is to contain short term risks and as such avoid some long term risks.

Reviewers suggested that the option for progressive reclamation should be part of the water licence application. Should some aspects be included as part of this application to provide flexibility for the five year period.

Project Description – Changes to Licence

Clarification is needed on what abeyance means.

The proponent provided some detail. Items that are being put in abeyance will still be in the licence, basically on hold pending successful closure plan development. There will hopefully be one clause regarding abeyance in the licence which will refer to a separate schedule in the back with all those items put in abeyance.

The requirement for criteria at closure (CCME, PMF, and MCE) are not being put in abeyance but will stay in the licence.

Discussion with Dana Haggar – Site Manager

The history of the discussion of sludge management issues was highlighted. Sludge used to be pumped back to Faro Pit. This was too expensive. Now run through thickener and through pipe to upper end of intermediate pond.

Work done at Faro Creek diversion was discussed. Includes a pilot ditch along with bentoimat ~~(?)~~ to reduce the volume of water leaking into the Faro pit~~going into Faro Valley dump~~.

Action Items

The following is a list of information requests stemming from the meeting to be provided to the Project Manager by D&T.

- Reword section on Sludge Management to provide clarification.
- Replace the word "demonstable" with "significant" in the discussion on impacts on N. Fork Rose Creek.
- Provide clarification on the objectives for the proposed maintenance activities for the Intermediate and Cross Valley Dams
- Provide clarification on the different criteria for Vangorda and Faro Pits on page 5-16.
- Provide clarification on linkages between the management objective of minimizing clean water entering the site and specific project activities.
- Provide an expanded discussion on the options for the oxide fines piles and clarification on the objectives of doing this work.
- Provide clarification on what is the fate of the leachate collected from the bioremediation cell.
- Clarify with Environment Canada whether the proposed use of microbes in the bioremediation cell with require authorization under CEPA.
- Move the last 6 AMP events to Accidents and Malfunctions.
- Provide clarification on the triggers being used in the AMP.
- Provide clarification on the trigger for the AMP event for the N. Fork Rose Creek, ground or surface water.
- Provide an additional component to the AMP for Rose Creek, downstream of the Cross Valley Dam.
- Provide clarification on what "abeyance" means.

Environmental Protection
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May 30, 2003 4484-37/A293

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Environment Directorate
310-300 Main Street
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Re: Anvil Range Mine Complex - 2004-2008 Water licence renewal - Environmental Assessment Report

Thank you, for sending us a copy of the above 3 volume report for our consideration. We have reviewed the information and have the following comments:

Our concerns with the Anvil Range mine has always been the timely closure and reclamation of the site and our concerns with the ongoing ARD generation which are increasing liability as actions towards reclamation are delayed. The proposal as described by the Interim Receivership is to preserve and protect the Anvil Range property and oversee the ongoing care, maintenance and environmental protection activities at the mine site. There is little said about the winding down of the receivership in the project description. Factual information about this process will put context in the licence renewal as property ownership/status may change. Furthermore the project description indicates that the Project Management Team will be providing information on the closure. The information guidelines indicated that the requirement for future abandonment and reclamation of the site will be a mitigation put forward in the screening document. The Project Management Team should come forward with the approach to closure plan so that the mitigation can be screened.

The receiver proposes a description of the care and maintenance activities along with some proposed new activities:
Section 6.2 - volume 1 indicates the remediation of hydrocarbon contaminated soil. We would like to point out that the use of microbe for the inoculation of soils would be subject to the Canadian Environmental Protection Act (1999) Part 6 dealing with Animate products of Biotechnology. The extent of the requirements will depends on the specifics of the activity.
Section 6.3 - volume 1 indicates the covering of the oxidized fines near the crusher

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stockpile. This area is known for its highly acid generating and known to release contaminants at high rate. We are concerned about the temporary nature of the reclamation activity (as indicated in the project description) for a known problem. The stockpile is not a large area in proportion to the overall site and we suggest the receiver to look at a more permanent solution in order to reduce the sunk cost of the activity.

The Adaptive Management Plan is proposed for responding to unforeseen events related to the degradation of the facilities.

One of the adaptive management events that has not been identified in the report is the degradation of the Rose Creek/ Vangorda Creek water quality. The report indicates events that may affect various portions of the Rose Creek watershed but not the portion of Rose Creek downstream of the tailings impoundment. We see the degradation of water quality and potential effect on the downstream aquatic resources on those receiving environments at the heart of the care and maintenance activities. We suggest that triggers that are measurable and verifiable be provided. To that effect we suggest a water quality objective for Rose creek and Vangorda Creek be developed and used for the Adaptive Management Plan.

The following events as described in table 12 (Degraded water quality of North Fork of Rose Creek, Degraded Groundwater quality in Rose Creek Valley Aquifer, Degraded seepage quality from the Grum Rock Dump) in addition to the events mentioned above need to have better defined triggers. Those triggers need to be measurable and verifiable both for the receiver's staff and for the regulators.

The proposal suggest the removal of clause 35 and 67 from the faro licence. We suggest that it is important to rephrase clause 37 and maintain clause 35 as we consider the progressive reclamation of the site to be an essential condition towards reducing the environmental effects on the aquatic system in a timely manner.

The licence QZ95-003 clause 65 establish the requirement of probable maximum flood (PMF) and maximum credible earthquake (MCE) for closure and under clause 66 the maintenance of long term water quality with the CCME guidelines for protection of aquatic life. Due the magnitude of the environmental effect that will result from failure of the tailings impoundment, we need to include this requirement as a mitigation for the care and maintenance project. The Receiver does not propose to remove the clause from the current licence but the RA needs to reaffirm this requirement as a mitigation against significant effects to the downstream aquatic environment.

The environmental Monitoring and protection in section 12 does not mention the maintenance of the sediment monitoring, this should be added to be consistent with the amalgamation of the two licences.

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We do not agree with the receiver's assertion that no follow-up monitoring for this project is required because the removal of the fresh water dam will address fish and fish habitat issue. The receiver may use the information for both project but the follow-up program for this project should be address in the screening. Fish presence and metal content has been identified as indicators for the VECC and should be followed-up. We think more information about the spawning in that Anvil Creek will be useful, and are especially concerned about he indication that chinook salmon may be present in the lower part of Rose Creek.

Should you have any questions, please do not hesitate to contact me at (867) 667-3402.

Yours truly,

Benoit Godin, Head
Environmental Contaminants

cc: Bill Slater - Environmental Assessment & Planning Section, YTG Environment
Sandra Orban - Habitat & Enhancement, DFO

To: Leslie Gomm
Environmental Assessment Unit

From: Bill Slater
Water Resources Branch

Date: May 30, 2003

Re: **Anvil Range Mining Complex**
Environmental Assessment Report

Water Resources has completed its review of the Environmental Assessment Report (EAR) provided by Deloitte and Touche (D&T) for the Faro Mine Complex. As you know from earlier discussions, Water Resources has some general concerns about the overall approach taken on the environmental assessment. There are five principle areas of general concern, each of which is discussed below: (1) assessment of the effects of specified activities, (2) establishment of baseline conditions, (3) triggers for adaptive management, (4) care and maintenance objectives, and (5) identification of mitigation measures. In addition, there are several specific comments on the EAR that should be considered in completing the screening report for this project. Water Resources is not requesting additional information in order to complete its review of this project, but would welcome the opportunity to participate in the development of the screening report, especially the mitigation measures and the adaptive management plan.

1. Assessment of Specific Activities

For the most part, Deloitte and Touche's environmental assessment only considers the effects of activities proposed as part of the care and maintenance. This approach to assessment for this project is not consistent with D&T's risk based approach to site management.

On the basis of its own risk analyses, D&T decides which potential environmental effects warrant action. In this way, the proposed care and maintenance project is defined by D&T's risk analyses, but it does not include activities to address all potential effects. Rather, the care and maintenance program only includes those activities which address the priority risks identified in the risk analyses.

Since the environmental assessment only considers the effects of the proposed care and maintenance activities, the EA assumes that environmental effects not identified as priorities in the risk analyses have disappeared. As discussed at recent meetings with D&T, many of the effects at the Faro Mine are not related to the activities. Rather they are related to the project as a whole and do not disappear because some unrelated care and maintenance activity was undertaken. These effects will continue to occur because D&T has decided that these effects are not high risk priorities. (For example impacts on groundwater under the tailings will continue to accrue during the proposed care and maintenance period, because no action is proposed to limit these impacts.)

The effects caused by not acting cannot be ignored for the purpose of environmental assessment because the effects will continue to occur. They are related to care and maintenance, even if they are not related to specific care and maintenance activities. For this existing project with substantial ongoing environmental effects, decisions about care and maintenance affect environmental impacts, whether those decisions lead to action or no action.

In Water Resources' opinion, the environmental assessment under the EAA must consider the environmental effects of the project, whether those effects are directly associated with care and maintenance activities or not. This is consistent with subsection 11(3) of the EAA;

> "Where a project is in relation to a physical work, an environmental assessment shall be conducted in respect of every construction, operation, modification, decommissioning abandonment, or other undertaking in relation to that physical work that is proposed by the proponent or that is . . . likely to be carried out in relation to that physical work."

The care and maintenance "operation" of the Faro mine facilities must be considered broadly, and the effects associated with the operational decisions, whether they result in activities or not, taken into account in completing the environmental assessment.

2. Establishment of Baseline Conditions

The environmental assessment completed by D&T evaluates effects in comparison to site conditions in 1998 to 2002. Since the mining activities have resulted in existing known and substantial environmental changes, Water Resources does not consider it appropriate to evaluate the project on this basis. Such an approach would allow substantial changes in VECC's over time, because it does not consider long-term trends.

We recognize that many of the care and maintenance activities may reduce, stop or reverse adverse trends. Thus, the proposed activities appear very positive in comparison to recent (1998) site conditions. This does not negate the effects that were present in 1998, many of which will still be present in 2008, and need to be addressed by future decommissioning activities. This is the impetus for a comprehensive decommissioning plan. The comparison to original baseline conditions is critical to completion of an effective environmental assessment that identifies the mitigation necessary to minimize or eliminate adverse effects in the long-term.

Water Resources recommends that the environmental assessment completed under the EAA evaluate the proposed project on the basis of original baseline conditions. This will allow the development of effective mitigation measures for addressing project effects, whether those effects are a result of past activities or proposed care and maintenance activities.

3. Triggers for Adaptive Management

D&T has proposed an adaptive management plan (AMP) to address uncertainty about potential effects in several areas. To be consistent with the proactive approach that the environmental assessment process is intended to achieve, the adaptive management program needs to specify (1) clear triggers that will be effective in identifying the need for action prior to the onset of significant adverse effects, and (2) actions that will be effective in preventing the onset of significant adverse effects once the triggers are reached. If the actions identified include further study to evaluate the conditions and actions necessary, the triggers for these studies should be sufficiently conservative to ensure that the actual responses can be effectively implemented prior to the onset of significant adverse environmental effects.

In general, the adaptive management plan as proposed by D&T does not include triggers that are sufficiently clear to ensure that actions will be taken when necessary. Some proposed triggers refer to changes that are "likely to cause a significant adverse effect." The establishment of such triggers in an environmental assessment that is intended to determine whether a project is "likely to cause significant adverse environmental effects" is a circular argument. As a key component of mitigation, the AMP needs to rely on measurable thresholds for what constitutes a significant adverse effect. These thresholds should be used to identify measurable AMP triggers.

4. Care and Maintenance Objectives

The care and maintenance activities proposed by D&T are based on eight objectives, as outlined in the EAR. As discussed at earlier meetings, these objectives do not identify the need to consider impacts on long-term liability. Ongoing decisions about care and maintenance activities can impact the accumulation of long-term liability at the site. A key objective of the project should be to ensure that activities do not result in further increases to long-term liability. It is recognized that this object may conflict with other objective, but ensures that a balanced approach is taken in making management decisions.

5. Identification of Mitigation Measures

In general, the EAR fails to identify specific mitigation measures that should be specified in the screening report. In part, this is a function of the activity based approach to assessment. Many of the activities proposed by D&T are mitigation measures. These activities are intended to prevent or reduce environmental effects. In essence, D&T's risk based approach to site management constitutes an environmental assessment. As a result of this program most of the activities should be identified as mitigation measures to ensure that there are requirements to continue these activities throughout the care and maintenance period.

Specific Comments

Volume 1

Section 3.3.6.6, Intermediate Dam – The EAR indicates that cracking on the intermediate dam will be remediated in 2003. It is Water Resources' understanding that resurfacing will be undertaken, which is not likely to achieve remediation. Section 3.3.6.7 includes similar statements about the Cross Valley Dam.

Section 3.3.6.7, Cross Valley Dam – The EAR states that a toe berm was constructed to reduce seepage. Toe berms generally do not function to reduce seepage, but attempt to control the stability impacts of seepage.

Section 5.2.1.4, Treatment Sediments from the Mill – Water Resources supports the proposal to complete a study in relation to management of treatment sludges at both Faro and Vangorda. This study should evaluate appropriate disposal/storage methods after consideration of the long-term chemical stability of the material. As stated in earlier meetings, Water Resources does not recall requesting that sludge be deposited in the Intermediate pond. Since the chemical stability is unknown, it is Water Resources' opinion that interim disposal decisions should be based upon certainty of physical containment, and ability to effectively treat remobilized contaminants.

Section 5.2.4.1 – Intermediate and Cross Valley Ponds

The water management regime for the intermediate pond should consider the long-term accumulation of liability due to oxidation of tailings materials. Regimes that rely on fluctuating water levels are likely to cause greater oxidation, and potential increases in long-term liability. While such regimes may be justifiable, the impacts should be considered in decision making.

Section 5.2.4.2 – Treatment Sediments, Cross Valley Pond

See comments on Section 5.2.1.4.

Section 5.2.4.3 – Intermediate and Cross Valley Dams

The EAR proposes unspecified "maintenance" works on the intermediate and cross valley dams. Some of the activities described constitute major works on these structures and cannot be considered maintenance. The EAR does not contain adequate information for Water Resources to evaluate reconstruction, upgrading or major repairs to these structures. As a result, these should not be included in the scope of the environmental assessment.

Section 5.2.4.7 – Rose Creek Valley Aquifer

The EAR states that it is unlikely that interception of groundwater will be necessary to protect surface waters and aquatic resources. As stated in earlier meetings, triggers

should be established for protection of groundwater, because action triggers based on surface water conditions in Rose Creek will not result in timely responses.

Section 5.2.6.1 – North Fork of Rose Creek

The EAR identifies water quality in the North Fork of Rose Creek as a trigger for initiation of contingency plans related to groundwater in the vicinity of Zone 2 pit and the main waste rock dumps. Clear triggers for action need to be established in this area. Also responses should be identified.

Section 5.2.6.5 – Rose Creek Downstream

As with the North Fork of Rose Creek, triggers for action and effective responses need to be established in Rose Creek downstream.

Sections 5.3.2.2/5.3.2.3 – Vangorda and Grum Rock Dumps

Clear triggers for action and effective responses need to be established with respect to seepage/groundwater quality in the vicinity of the Vangorda and Grum rock dumps.

Section 6.2.3.2 – Bioremediation

D&T proposes a bioremediation facility for treatment of contaminated soils. The EAR contains only limited information about this facility. While the conceptual information is sufficient for environmental assessment purposes in this case, more detailed design information needs to be provided prior to construction. Water Resources recommends that the screening report establish a requirement for submission of more detailed designs. This information can be used to ensure that the proposed facility will perform adequately.

Section 6.3 – Maintenance of Acid Generating Materials

Water Resources supports D&T's decision to investigate options for control of metal mobility from various storage areas for oxidized acid generating materials. Rather than proceed with the cover proposal immediately however, Water Resources recommends that D&T follow the approach proposed by Environment Canada at a recent meeting: to more fully consider ARD control options, especially those that may reduce long-term costs. Such costs could be minimized by implementing a longer term solution immediately even though short-term costs may be slightly higher. If the control measure chosen incorporates an engineered facility (i.e. a cover), then the screening report should establish a requirement for the provision of more detailed design information prior to construction.

Section 7.1.4 – Adaptive Management Plan

As discussed above in the general comments, the triggers in the AMP need to be clarified so that they are measurable, and are effective in initiating responses in a timely manner.

Where possible, these triggers should be identified in the screening report, since they form part of the critical mitigation.

As discussed previously, there are several events identified in the AMP that are not appropriate for adaptive management. These include: (1) breach of the Faro Creek Diversion, (2) breach of the Rose Creek Diversion, (3) breach of the Vangorda Creek diversion, (4) failure of the Vangorda Creek Haul Road culvert, and (5) failure of the Intermediate Dam. These are the type of events that should be prevented by an adaptive management plan. If these are possible events then early triggers should be established such that appropriate actions are taken to prevent these activities. If not, then these are accidents and should be addressed in the accidents section.

Volume 3

Section 3.3.3

The EAR suggests that short-term effects of lateral seepage from the tailings would be detected by surface water quality monitoring. If this is a significant concern, a monitoring program should be developed to provide timely response information. Surface water quality monitoring will not provide timely information about lateral seepage conditions.

Table 4 – Interactions Matrix

As discussed in the general comments, Table 4 fails to identify many important project effects because it only considers the effects associated with proposed care and maintenance activities. As a result, the interactions identified in Table 4 do not reflect the effects that may occur and the interactions. For example, Zone 2 dewatering is identified as having an interaction with stream flows, but not with stream water quality. The primary purpose of dewatering is to protect water quality. As such, the Zone 2 dewatering is a mitigation measure intended to prevent adverse environmental effects. Since D&T has only considered the effects of its proposed activities however, the importance of this mitigation is masked in the EA.

Section 4.3.2 – Analysis of Effects

The EAR proposes that Tables 4 through 7 identify potential positive, negative or neutral environmental impacts. It is not clear how impacts can be neutral.

Section 5.2 – Water Resources

In the Potential Effects section, the EAR states that "no new discharges or activities which would alter water quality or stream flow are proposed." Also, the section lists project activities that are likely to affect various water related VECCs. This demonstrates the failure of the activity based approach to the environmental assessment. While there are no new care and maintenance activities proposed, there are ongoing discharges that

are altering water quality. Most significantly, there are discharges to groundwater from the tailings impoundment. Information collected in the past several years indicates that these discharges are affecting groundwater. These effects will continue throughout the proposed care and maintenance period because there is no activity proposed that will prevent their occurrence.

Table 11 – Effects Assessment, Water Resources

As a result of the activity based assessment approach, and the choice of baseline conditions, the effects assessment identifies only one effect that is not "neutral." It is clear that the effects of care and maintenance of the site for five years will not be neutral. In some areas, water quality may improve while in other areas it will likely deteriorate. Water quality will likely deteriorate in groundwater under the tailings and downgradient of the main waste rock dumps. These ongoing impacts are the impetus for the implementation of a long-term closure plan and should be identified in the environmental assessment.

Section 5.2.2 – Proposed Mitigation

D&T suggests that no mitigation is necessary for water resources. It should be recognized in the screening report that many of the activities being proposed by D&T constitute mitigation. D&T is carrying out these activities because its risk assessment has identified them as priorities for preventing adverse environmental effects. The need to continue carrying out these activities throughout the care and maintenance period should be identified in the screening report as mitigation.

Section 7.2 – Potential Effects of the Environment on the Project

The EAR suggests that contingency planning is the only way to prepare for extreme flood and earthquake events. In Water Resources' opinion, the effects of such events can also be eliminated or reduced by ensuring that structures are adequate to withstand events with long return periods. As such, appropriate design return periods should be identified for the care and maintenance period, and D&T should be required to ensure, through an appropriate review program, that its facilities are designed/constructed/maintained to withstand these events.

We were subsequently asked to disregard this submission.

Glenn, Shannon (CA - Toronto)

From: Leslie.Gomm [Leslie.Gomm@gov.yk.ca]
Sent: Friday, June 13, 2003 2:25 PM
To: Glenn, Shannon (CA - Toronto); kalffs@inac.gc.ca
Subject: FW: faro

Here are Kirstie Simpson's comments on the EAR for your information

Leslie

-----Original Message-----
From: Kirstie.Simpson
Sent: Thursday, June 12, 2003 2:48 PM
To: Marg.Crombie
Cc: Leslie.Gomm
Subject: faro

Review of Faro/Anvil Range Complex
2004-2008 Water Licence Renewal EA Report
EMR, June 12, 2003

As a general comment, I found the report to be well written and organized and easy to follow. Structure, headings and the care and maintenance context (see below re: context) were clear. The site/feature description is as thorough and concise a description of the mine facilities as I have seen so far and I would recommend that it forms the appendix description for the proposed decommissioning plan. The environmental assessment volume was the weakest of the three that I reviewed. Detailed comments on all volumes will follow but where I have commented in the executive summary, I have tried not to repeat my comments in the referenced volume.

My primary concern with the EA is whether or not it is valid to use the 1998 to 2002 conditions as the "baseline" for the effects assessment. Page 12 of the report states that the fundamental objective of the care and maintenance plan is to ensure that the terms and conditions of the water licence are achieved, thereby recognizing that this is a regulatory issue, not an EA issue.

The premise of good EA is that pre-development or pre-project information is used as the baseline with which to compare the post-development effects and determine the significance of impact. Overall, a direct contrast between a "zone of influence" and a "zone of non-influence" is the most powerful approach to evaluate potential impacts. Trying to contrast the zone of influence of today with the zone of influence of the past 5 years does not allow you to evaluate potential impacts although it does allow you to determine whether or not your mitigation strategy has been successful.

If you look at the CEAA RA guide on determination of significance, it asks that you apply appropriate criteria to determine if an environmental effect is adverse. It further states that the most common way to determine if effects are adverse is to compare the

quality of the environment before the project with the predicted quality of the environment with the project in place. Identified adverse effects are then considered for significance, one criteria being the ecological context. In this case the ecological context must be the Rose Creek Valley, etc, before development, not during operation.

At various times in the document the term significant adverse impact is used. An example is page 21, table 2, third box down, in which the trigger for action is that "degraded seepage quality from the grum dump (may result in) water quality in Vangorda Creek contain(ing) sustained concentrations of substances at levels that are likely to cause a significant adverse environmental impact in Rose Creek". Because the ecological context is not defined (i.e. the resources to be protected and the baseline being used to assess change), the criteria is not defined that will protect the resources (e.g. xx ppm), and the location or geographical context is not defined (i.e. where in Rose creek are conditions supposed to revert to background?), it will be a very difficult task to make a determination of significance. The other issue this raises is the identification of the objectives of the care and maintenance plan. The objective of the care and maintenance program is to meet the terms and conditions of the licence. A question never fully answered by the existing licence is what the downstream water quality objective is beyond the last point of control or defined monitoring location.

It really makes no sense to do an EA based on existing impacts or status quo as the baseline. While I can see that the intent was to treat the project as a short term maintenance project, and not a decommissioning project, it still does not mean that standard predictive methods should be ignored.

I think that one reason that standard EA methodology does not work for this project seems to be because the legislation was never intended to review a status quo project for which no EA was done prior to the project being built. This is a project (the Faro portion) which was constructed prior to EARP and CEAA. Hence the baseline is not

understood, and the construction and engineering details of much of the project are unknown.

The legislation as far as I can see exempts this project from undergoing an EA. Section 74(4) of CEAA specifically states that where the construction or operation of a physical work or the carrying out of a physical work was initiated before June 22, 1984, CEAA does not apply in respect of the issuance or renewal of a licence, permit, approval or other action under the prescribed provision in respect of the project unless the issuance or renewal entails a modification, decommissioning, abandonment or other alteration to the project, in whole or in part.

Care and maintenance of an existing project using the same or similar mitigative strategies to reach the same licence objectives as were employed during operation does not appear to equate to a modification or alteration.

The Vangorda/Grum portion of the project did undergo an EA under EARP. As far as I can see from the project description the only alteration to the project that was proposed and reviewed under EARP is the abandonment strategy which is undergoing a separate EA, and therefore sections 74(3) (b) and (c) do not apply. The Vangorda project EA could still be applied under Section 74 (3) (d) and could be used for the purposes of complying with section 18 of CEAA and therefore the EA for this licence renewal.

Not withstanding the above, the documentation in this EA report could go a long way to satisfy the requirement of the EA of the decommissioning plan, and allow for preparation of the licence application.

Executive Summary

- Page 1. Para 1. Typo…form should be from.
- Page 2 second side bar. Missing space in second line
- Page 2, Para 4 of the Executive Summary should read "the Northern Affairs Program of DIAND", and not "Federal". "Territorial governments" should read "Territorial Government".
- Page 10, last line. Impacts should read effects. Effects are not necessarily an impact.
- On page 13, the first objective of the care and maintenance plan is to minimize the quantity of clean water that enters of crosses the mine site. This objective is not reflected in any of the management systems and physical activities listed on that same page. As this is one of the few pro-active actions (as apposed to re-active) for control of off-site impacts, specific measures to achieve this objective should be highlighted.
- On table 1, starting on page 14:
    - The activity listed under the mill water treatment system is to treat and discharge to Rose creek, the X-valley pond or Int. Pond. The criteria/rationale should be outlined for which location is chosen and an objective should be to try and increase the percentage that goes to Rose Creek as apposed to the storage ponds.
    - For the Intermediate and x-valley pond seepage location and release of water to Rose creek action, the rational should be more specific. Is the compliance issue maximum storage or water quality?
    -The rational for the sludge disposal into the intermediate pond does not make sense.
    - More information on the "Rose creek tailings investigation of source areas of contamination" activity would be useful. Perhaps specify that it's airborne or dust contamination you are investigating.
    - Page 17 of the table has numerous typos
- Page 18. 2nd last line. Typo.
- page 19. Para 2. Has there been a phase 1 site assessment?
- Adaptive management Plan. Much of the plan as described reads like a contingency plan or accident response plan. Only the first 3 items seems to be part of an adaptive

management strategy. The rest belong with the contingency plan. A number of items notes in Table 1 are adaptive management strategies. It would seem that if success had been achieved over the past 5 years in meeting discharge standards, anything that led to a failure to meet discharge standards would be a trigger to look upstream for a cause.

- Page 23, bullets 2,3 and 4 should be carefully considered and a review of the existing contingencies, monitoring protocol, and other terms and conditions that are to be replaced should be carried out before accepting the proposal.
- Page 26, Para 2. The LSA is defined as extending from the background water quality upstream of each mine site to the first monitoring point downstream of where the effluent enters receiving waters. It would seem therefore that the project impacts are being compared to the background, but this is not the case. Para 4 states that effects are being evaluated as relative rather than absolute thereby giving the care and maintenance project a neutral impact. This seems contradictory.
- Para 3, page 26. Suggest that a word other than trivial is used.
- Para 4, page 26. March 2002 should read March 2003.
- Page 28. Where is the definition of TK from? If the scope of the effects assessment is only 1998 to 2002 as stated on page 26, then how can TK be considered?

Volume 1- Project Description

-Page 2-4, Para 4, Vol. I, should read "may" become an abandoned property under the DTA, not "will". I also believe that reference should be made to the status of the mine under the *Yukon Waters Act.* If the interim receiver is discharged of its responsibility under Section 27 of the YWA this will allow the Yukon Government to step in and use security.
- Page 2-13 last Para. This paragraph is not a correct interpretation of the situation vis-à-vis the ICAP. While I cannot recall the details, my recollection is that the ICAP was submitted shortly before the company went into receivership and without any commitment to the plan it made no sense to review it. As well the opportunity to "approve" the plan was not presented as the regulatory process was also put on hold by the financial status of the company. I also recall that a number of options were under

discussion. As well, the Vangorda Closure Plan, while somewhat conceptual, was an approved closure philosophy with agreed upon closure measures (including details such as the thickness of till covers over the waste rock and in the pit) and security was held on the basis of the costs of this closure plan.

- Page 5-6, 5.2.1.4. All requests for action should be confirmed in writing. It is not acceptable to simple say that an action was requested by one of the parties.

Page 5-6, 5.2.2.1. Para 3. This Para speaks to the fact that there has been no identification of demonstrable impact on the surface waters of the north fork of Rose Creek. Given that the objectives to be met have not been defined, I am not sure if we can agree to this statement. This is in fact the crux of the issue. Without objectives or effects criteria, it is difficult to make a determination of effect.

- Page 5-8, second last Para. The discussion seems contradictory in that it mixes up potential water quality impacts with potential risk of dam failure. Which objective is this action intended to protect? Perhaps the water quality issues vs. the physical structure issues should be separated for this section.

- Section 5.2.4.2. Will deposit of sludge to the Rose Creek Tailing storage facility increase the liability in the intermediate pond?

- Section 5.2.4.3, Para 3, bullet 2 should read maintain instead of upgrade. Bullet 4. Do you mean design specifications when it says design configurations? If not, what work is intended to meet design configurations?

- Section 5.2.4.5. I have not seen the proposed wind dispersion of contaminants study design but Dr. Janet Kidd from the University of Alaska is a specialist in this field and is currently carrying out modeling of dust dispersion by wind and the effects on Caribou habitat at the Diavik Diamond Mine in the NWT. You may wish to draw on her expertise.

- Section 5.2.6.5, the statement is made that water quality in Rose Creek downstream of the mine facilities is representative of the receiving environment. This statement should be qualified. Where downstream are you referring? How do you know it is representative of the receiving environment? How are you defining the receiving environment?

- Section 5.2.6.6. The statement is made that water quality in Anvil Creek upstream of the confluence with Rose Creek is representative of background conditions in Anvil Creek, and water quality downstream of the confluence of Rose and Anvil Creeks is

representative of the receiving environment in Anvil Creek. Do DOE and DFO agree with this?

- 5.3.2.2, are all piezometres now working?

- 5.3.4.1, Failure of the Vangorda pit wall would seem a contingency planning issue, not an adaptive management issue.

- 6.1.2.6, mention should be made of where the surface water is being diverted to from the covered waste dump, and how water quality will be ensured before discharge to a receiving environment.

-6.2.3.6, seems to contradict section 8.3 in the executive summary. Is a phase II ESA being carried out? Has the site been found suitable for bio-remediation?

-6.3.3, how to the results of the ARD tests from the Vangorda rock dump compare with the original predictions? This seems to be the time to reassess the predictive model results used in the original EA done on the Vangorda/Grum development.

- Section 7. As stated in the executive summary comments, the adaptive management approach reads more like a contingency plan for actions and malfunctions. An AMP is intended to be a method of tweaking the mitigative tools to match the impact predication results. If the risk management tables have been produced it would be valuable to include them here as determination of likelihood of occurrence is a factor in determination of significance.

- Section 10.1. With no disrespect intended, how will TK be used regarding the potential for metal contamination in the terrestrial environment. While it is logical to include the Ross River Dena in discussions on the design of this study, collection of data, and results, there is unlikely to be TK available about metals in soils and vegetation. Perhaps you mean changes in browsing preference or use of certain habitats? In terms of the study design itself, it seems that snow sampling should be included, not just soils and vegetation and air. It would seem logical to confirm contaminant levels in soils before looking at tissues. Is there knowledge of natural background levels of contaminants in the animals? How will you know if contaminants found in tissues are widespread or local in nature and how will you confirm the source? Have YTG biologists been consulted? I suggest you look at proven expertise in this area before proceeding (i.e. Dr Janet Kidd in Alaska).

Volume II – Description of Existing Environment

-Sections 2.6.4.4 and 2.6.4.5, I am not sure how useful the results are given that sample size, locations, species, tissue type and metals analyses are inconsistent. Obviously different tissue types concentrate metal differently. It is also hard to say whether low sample numbers are a result of catch success or fish presence. I found it difficult to interpret the results presented in table 39. Locations for different species were not consistent, nor were the reference sites. I can't tell where you use an average and where you use a composite. The numbers overlap at times (e.g. sample V8-17 to 23 would appear to be a composite but the next sample is labeled V-8 18 to22) so that it's hard to tell how many individuals were sampled to get a large enough sample size. As well, individual's length and weight is important as there is a correlation between size and bio-concentration.

- Section 2.7.4.2., the information in this section indicates that there is an impact on the moose, and in particular, bull: cow ratios. Specifically, increased hunter access and harvest levels associated with mine development are mentioned. If access to the area causes an impact, then why is no mitigative strategy proposed?

Volume III – Environmental Effects Assessment.

- 1.2, see comments on devolution process in Exec Summary
- 2.1, I am not comfortable with the temporal boundary determined for the EA of this project in terms of the baseline and control. Yes the site currently exists but the EA comparison should be as close to unimpaired as possible. Impacts in this case are not relative, and while absolute is also not possible (because no baseline was collected prior to 1974 when the project was initiated), the background of today is possible to determine. Achieving a neutral impact as compared with the last 5 years is consistent with the requirements of the water licence (presuming water licence conditions have consistently been met), but it is not consistent with standard EA practice. As such, the premise of this EA is flawed.

- The last Para on page 2-2 is awkward but it would appear that Volume II of the original May 2002 project description (historical data and site characterization) is an integral component of completing this EA. Is this correct?
- 2.2 Consultation is not TK. What Weinstein Report is referenced? Is it specific to the Faro project? Is there no Land Claim based information available? Where is the reference to the Greer Report? There is also a good report by Usher and Staples on the opening of the north canol area which would be a useful reference. Is the Dreyer and Smith Report considered to be an appendix to this document? What is the "information Sharing Protocol"? The same basic standards must be applied to the TK data as to SK data. If the information used is third hand, not credited, substantiated or recorded, it should not be used for an EA determination. Also the use of TK is contradictory to the 1998-2002 baseline chosen and is therefore inconsistent with the rest of the work. I don't think it's fair to place the concern about wind blown contaminant in the TK section. Ross River raised a valid ecological concern and it should be reflected as such.
- 2.3, page 2-6. While I agree that identification of employment opportunities is important and should be considered in the priorising of work and allocation of costs by YTG/DIAND, it is not an EA issue.
- 2.4.2, VECC's are not selected or identified on the basis of their vulnerability to effect or their value. The value and vulnerability are considerations in terms of potential effect on the VECC and determination of significance. The order is as follows: 1) is it a VECC? ; 2) Is it effected? ; 3) Is it significant? ; 4) Is it mitigatable? ; 5) Is there residual effects?
- 2.4.2.2, the side bar is not an accurate reflection of the contents.
- 2.4.2.3, VECC indicators were selected as a means of measuring change in the VECC. The indicators were selected based on the existence of baseline data. If true baseline data was used this is both correct and inconsistent with the rest of the discussion in the document, If 1998 was used, this is not a baseline.
- Section 3. Throughout this document, reference is made to DIAND, the Environment Directorate and the Project Assessment Manager. All references to

those should be changed to RA. It is not the responsibility of the proponent to describe the activities of the RA nor to site consultation by the RA.

- The third Para on page 3-1 is very confusing. It states that the section to follow is not a description of the proposed consultation to be undertaken for care and maintenance, not for closure planning. It sites Volume I, section 2.1.5 as describing consultation when that section describes communication (e.g. Submission of reports). It then goes on to discuss consultation in section 3.
- 3.2 CWS is a part of Environment Canada. Is it necessary to list all the "stakeholders"? Does stakeholder mean that was who consultation took place with?
- 3.3.1, I suggest that this section be removed. It is the responsibility of government and the RA to describe the process. All references to project manager, etc, should be changed to RA. The RA (the Minister) is DIAND, and now YTG. A specific department such as water resources is not an RA. If DFO did not specify a regulatory trigger as listed under CEAA, it is not an RA. Neither is Water Resources a stakeholder as stated on page 3-4. YCS and the YSC are stakeholders, but their consultant is not.
- 3.3.3, bullet 1 should read impacted, not located. Bullet 2 should reference existing evidence of impact to wildlife from tailing.
- 3.4 and 3.4.1. Remove the "R" from the heading "EAR". Remove Para 4. It is up to the RA to describe a meeting it had with the Ross River Dena.
- Table 4 is difficult to understand. The unidentified portion of the "Y" access seems to be an objective. Gartner Lee, when asked on the phone, said it was an "indicator". An example is "benthic invertebrate community structure in Rose Creek compared to reference communities. Do you mean that the indicator is a change in species diversity or population density compared to reference? Either way, it does not make sense. I suggest that if this is intended to be an interaction matrix, you are confusing it by trying to qualify the kind of impact or response to impact. If this line was removed it would be understandable. Alternatively the global objective of no change to status quo or meeting the objectives of the water licence could be added instead.

- 4.3.2 I suggest that the word relationship or effect be substituted for impact. Effects are not necessarily impacts.
- 5.1.1 Air Quality is identified as the VEC. CCME is identified as the objective for determination of effect. Not meeting CCME is an indicator of a possible effect. This is the correct approach.
- 5.2.1, This whole water resources section seems flawed. The indicators as listed are not indicators, they seem like objectives (e.g. "maintain pit surface water elevations within desired range"). If the pit water levels exceed the prescribed range this would be an indicator of loss of control of the faro creek diversion. A change in site or off-site water flow patterns would be an indicator of failure to meet pit water elevation requirements.
- 5.2.2 If there are no adverse effects identified for the water resources VECC's why are there so many mitigation and monitoring measures? Securing of contaminated soils is identified as an action for example. This is the mitigative measure for the existence of contaminated soils. The mitigation renders the effects negligible or insignificant.
- 5.3.1 The indicators chosen for the fish habitat and health VECC are correct (e.g. a change in benthic invertebrate community abundance and richness). For the indicator that identifies metals in fish compared with reference, is this an increase, a trend, or an exceedance of CCME?
- 5.3.1.1, Para 1 is awkward. Fish habitat effects are also assessed in terms of water quality, not just sediment quality. Remove "causing degradation of sediment quality" from the first sentence. . Benthic community indicators are identified as "reduced variability and the levels of metals in the tissue". This should read changes in community structure (diversity and density). Does the metal in tissue indicator apply to the fish or the benthic?
- 5.3.1.1, Para 2, This Para says that Environment Canada indicates that there is no statistical difference between reference tributary sites flowing into Rose Creek and sediment from the mainstream of Rose Creek immediately below the mine site. These reference sites are not identified. The Prevailing winds at the Faro mine site are South-East and the sample sites for the possible wind dispersion of

contaminants are downwind of that in the north-west section of the Faro mine site (in the Rose creek drainage, including tributaries). Therefore, the fact that there is apparently no difference in metal levels in sediment from Rose Creek proper and its tributaries may mean that the whole area is contaminated. A logical reference would be a background site outside of the footprint or influence of the mine.

- 5.3.1.2. This section discusses the possible impacts on fish populations. It says that since the only fish distribution data for the 1998-2002 baseline time reference was in 2002 it is not possible to determine if there are any trends in fish distribution that may be related to care and maintenance activities. The same is true for metals in fish. The report then goes on to say that no adverse effects were identified and therefore no mitigation is required. Lack of data does not mean there is no effect. The mitigation is that which is attached to the licence. This wording could allow the water board to remove the requirements for certain mitigation measures as no impacts are identified. This highlights the fact that it is not possable to do an EA based on the limited temporal scope selected.
- Section 11. There is a fundamental flaw with the approach taken in this EA, and I would disagree that the assessment of environmental effects for the proposed project activities was carried out according to the requirements of CEAA. It is possible to have a "neutral" incremental effect if an EA has already been done. The Changes to a project can then be compared with the effects of the previous project. You cannot not have a neutral effect from a large scale lead zinc mine that has been operation for almost 30 years.

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June 22, 2003

Ms. Leslie Gomm
Project Assessment Manager
Environmental Assessment Unit
Executive Council Office
P.O. Box 2703
Whitehorse, Yukon Y1A 2C6

Dear Leslie:

Anvil Range Mining Corporation ("Anvil Range") - Follow-up to May 13 2003 EAR workshop

We have received your document *Anvil Range Water Licence Renewal, Meeting Notes – May 13, 2003,* (the "Meeting Summary Notes"), which summarize the meeting that was held on May 13 in Whitehorse to discuss the report *Anvil Range Mining Corporation (Interim Receivership), 2004 to 2008 Water Licence Renewal, Environmental Assessment Report, April 2003* (the "EAR"). We note that the Meeting Summary Notes are informal in nature and represent a high-level description of the major topics discussed.

This letter provides responses to each of the 13 specific response items that are documented in the Meeting Summary Notes. The intent of this letter is to resolve the action items that were raised and to assist in the completion of the screening of the EAR. Where appropriate, and for most of these items, a resolution to the response item was also subsequently included into the Water Licence Renewal Application Report (the "Application Report"), which was submitted to the Yukon Territory Water Board on May 20 2003.

One of the topics that were discussed at the May 13 meeting was the global or overriding goal of the care and maintenance activities. The overriding goal of the proposed care and maintenance activities is to provide short-term mitigation of environmental effects related to the existing mine facilities, while a Final Closure and Reclamation Plan is developed by the government Closure Team. The meeting participants raised the point that the overriding goal should also aim to minimize or eliminate increases in long-term liabilities at the site. We have selected our proposed care and maintenance activities with this additional objective in mind but we agree that we could have made our intent to that effect more explicit. As a result, we suggest the following new wording for Section 5.1 of Volume 1 of the EAR:

5.1 Overview of the Care and Maintenance Plan (first two sentences of paragraph 1)
The fundamental objective of the Care and Maintenance Plan is to provide short-term mitigation of environmental effects by ensuring that the terms and conditions of the water licence are achieved. Activities are also chosen to prevent, to the extent possible, an increase in long-term liabilities at the site and to not constrain long term closure planning. ...

Response Items from the Meeting Summary Notes

1. Reword section on Sludge Management to provide clarification

The following wording is suggested for Volume I of the EAR:

5.2.1.4 Management of Treatment Sediments from the Mill Water Treatment System
The treatment sediments ("sludge") from the mill treatment system are stored in a clarifier tank in the mill and periodically removed to the Intermediate Impoundment of the Rose Creek Tailings Facility to maintain storage capacity. A study is proposed for 2003, as described in this volume under Proposed Studies, that will determine the most appropriate sludge management plan for the duration of the care and maintenance period (i.e. until the FCRP is developed and implemented).

5.2.4.2 Management of Treatment Sediments from the Cross Valley Pond Water Treatment System
An estimated 13,100m^3 of treatment sediments that had accumulated in the Cross Valley Pond at the base of the inflow spillway were excavated and removed to the Faro Main Pit in the winter of 2001/2002. A study is proposed for 2003, as described in this volume under Proposed Studies, that will determine the most appropriate sludge management plan for the duration of the care and maintenance period (i.e. until the FCRP is developed and implemented).

5.3.1.3 Management of Treatment Sediments from the Grum/Vangorda Water Treatment Plant
The treatment sediment ("sludge") from the water treatment plant accumulates in the settlement pond and is periodically removed as practical to maintain storage capacity. An estimated 100 tonnes of sludge is generated each year. On one occasion during mine operations, sludge was removed to the Faro Main Pit and in 2001, prior to reactivation of the WTP, sludge dating from operation of the WTP during mining operation was removed to the Vangorda Pit. A study is proposed for 2003, as described in this volume under Proposed Studies, that will determine the most appropriate sludge management plan for the duration of the care and maintenance period (i.e. until the FCRP is developed and implemented). The available storage capacity in the settlement pond is adequate to contain sediment produced in the interim period while the 2003 study is undertaken.

2. Replace the word "demonstrable" with "significant" in the discussion on impacts on N. Fork Rose Creek

The following wording is suggested for Volume I of the EAR:

5.2.2.1 Seepage to the North Fork of Rose Creek (last paragraph)
The surface and subsurface flows are monitored as part of the site water monitoring protocol, and have not been identified as having an increasing impact on surface water in the North Fork of Rose

Creek. No routine care and maintenance activities are proposed beyond continued water quality monitoring. The Adaptive Management Plan described in Section 7 of this volume includes provision for monitoring and responding to degraded seepage quality to the North Fork of Rose Creek.

3. Provide clarification on the objectives for the proposed maintenance activities for the Intermediate and Cross Valley Dams

The following wording is suggested for Volume I of the EAR:

5.2.4.3 Intermediate and Cross Valley Dams (third paragraph)

1. *investigation and repair, if appropriate, of surficial cracks;*
2. *upgrading and/or replacement of rip rap and other erosion protection measures;*
3. *repairs to surficial erosion rills on the downstream slopes; and*
4. *maintenance of the crest, spillways or other features to the initial design operating configurations where erosion or mining activities have altered those structures.*

4. Provide clarification on the different criteria for Vangorda and Faro Pits on page 5-16

Both the Faro Main Pit and the Vangorda Pit are operated to maintain the pit water levels below a maximum desired elevation. The maximum desired water elevations for the two pits were determined using a variation of the same approach to ensure that adequate emergency storage capacity is available to contain an unanticipated inflow of water. In both pits, the pit water is non-compliant and cannot be discharged directly to the environment.

The maximum desired water elevation for the Faro Main Pit was initially calculated in 1991 and presented in a report by Kilborn Engineering that described two options for managing recycle water from the pit (the mine was operating at that time). The maximum desired water elevation was calculated as providing containment of the equivalent of a probable maximum flood event of 1-week duration with a complete breach and inflow of the Faro Creek Diversion.

The maximum desired water elevation for the Vangorda Pit was initially calculated in 1996 and presented in the Integrated Comprehensive Abandonment Plan as part of the description of possible closure methods for the pit. The maximum desired water elevation was calculated as providing containment of the equivalent of 50% of a probable maximum flood event of 1-week duration with a complete breach and inflow of the Vangorda Creek Diversion.

The reasons for the differences between the two determinations (complete breach of 1-week duration flood versus 50% of same) are due to consideration of location-specific needs, circumstances and risks. For example, the northeast pit wall of the Faro Main Pit is known to be undergoing an active retrogression of the crest towards the Faro Creek Diversion channel. This represents a heightened risk of failure of the Faro Creek Diversion into the Faro Main Pit as compared to the north wall of the Vangorda pit (underlying the Vangorda Creek Diversion Flume), which is more stable. Therefore, increased emergency storage capacity is provided for in the Faro Main Pit.

Another example of location-specific circumstances is that road access to the Vangorda Creek Diversion Flume is excellent and allows for immediate access by heavy equipment for emergency repairs to the flume or pit wall. Road access to the Faro Creek Diversion channel is, however, poorer and would require longer to access with heavy equipment for emergency repairs to the channel or pit wall. Therefore, increased emergency storage capacity is provided for in the Faro Main Pit.

5. Provide clarification on linkages between the management objective of minimizing clean water entering the site and specific project activities

The following wording is suggested for Volume I of the EAR:

5.1 Overview of the Care and Maintenance Plan (paragraph 5)
The specific objectives of the Care and Maintenance Plan are as follows:
1. *to maintain the existing systems for minimizing the quantity of clean water that enters or crosses the mine site and subsequently requires treatment;*
2. ...

6. Provide an expanded discussion on the options for the oxide fines piles and clarification on the objectives of doing this work

The following wording is suggested for Volume I of the EAR:

6.3.2 Oxidized Fines near the Crusher Stockpile (new last paragraph)
and
6.3.3 Oxidized Fines in the Vangorda Rock Dump (new last paragraph)
Nonetheless, other options for interim reclamation of these piles may be brought forward prior to the work being undertaken and any other such options will be considered for implementation. In addition to providing short term mitigation of effects, another key consideration for selection of the preferred interim reclamation measure will be to complement, to as great a degree as possible, the work of the Closure Project Team.

7. Provide clarification on what is the fate of the leachate collected from the bioremediation cell

The following wording is suggested for Volume I of the EAR:

6.2.3.5 Design Considerations – Leachate Control (last paragraph)
Leachate collected from the sump would be collected and redistributed on top of the soils to maintain moisture conditions. Nutrients may be added to the circulated leachate to maintain an adequate nutrient balance in the soils. Distribution of the leachate will be via a network of perforated hoses or pipes. As a contingency measure against the accumulation of excess leachate, (more than required to maintain soil moisture), a holding tank would be utilized to store the excess leachate until such time that the excess leachate can be added back onto the soils or until such time as an appropriate disposal method is implemented.

8. Clarify with Environment Canada whether the proposed use of microbes in the bioremediation cell with require authorization under CEPA

The following wording is suggested for Volume I of the EAR:

6.2.3.2 The Bioremediation Process (paragraph 2)
Bacteria is naturally present in soils and consumes the organic compounds, which is usually the contaminant. This natural degradation of contaminants can be accelerated by adding fertilizer (nutrients) to the soil and controlling moisture and oxygen levels to promote microbial growth. The addition of nutrients, air, moisture stimulates microbial activity and their growth is enhanced, which increases the rate of contaminant consumption or degradation. In some cases, the soils are inoculated with special microbes that promote increased degradation rates. It is important that the bacteria or other nutrients utilized are cross referenced for compliance with the Canadian Environmental Protection Act.

9. Move the last 6 AMP events to Accidents and Malfunctions

Suggested revisions to Section 7 of the EAR (Adaptive Management Plan) and Section 8 of the EAR (Accidents and Malfunctions), which are proposed as resolving this request, are attached.

10. Provide clarification on the triggers being used in the AMP

Suggested revisions to Section 7 of the EAR (Adaptive Management Plan) and Section 8 of the EAR (Accidents and Malfunctions), which are proposed as resolving this request, are attached.

11. Provide clarification on the trigger for the AMP event for the N. Fork Rose Creek, ground or surface water

Suggested revisions to Section 7 of the EAR (Adaptive Management Plan) and Section 8 of the EAR (Accidents and Malfunctions), which are proposed as resolving this request, are attached.

12. Provide an additional component to the AMP for Rose Creek, downstream of the Cross Valley Dam

Suggested revisions to Section 7 of the EAR (Adaptive Management Plan) and Section 8 of the EAR (Accidents and Malfunctions), which are proposed as resolving this request, are attached.

13. Provide clarification on what "abeyance" means

The following wording is suggested for Volume I of the EAR:

9.2 Amendments Regarding Mine Closure (new section)
In January 2003, an announcement was made by DIAND that the development of an FCRP would be undertaken by a government project team that would be formed for this specific purpose.

Development of a new FCRP for the mine complex, as planned by the project Closure Team, is necessary to:

- *provide a comprehensive plan that integrates all aspects of the mine complex into the one cohesive plan;*
- *take advantage of advancements in mine reclamation technology that have occurred since previous closure measures were proposed; and*
- *resolve information gaps.*

The planned development of the FCRP by the closure Project Team has two primary implications for the existing water licences.

The first implication involves clauses that require the licencee to implement closure measures according to timeframes that do not correspond to the proposed timeframe for the FCRP and that may not correspond to the closure measures that are ultimately proposed in the FCRP. These clauses are proposed to be held in abeyance for the duration of the new water licence. That is, these clauses would remain in the licence but would be specifically stated as not having effect for the duration of the licence. In this way, these clauses could come into effect again at the expiry of the licence, if necessary.

The second implication involves closure related studies. Studies related to developing reclamation and closure measures are under the direct management of the closure Project Team and will be executed as appropriate to develop the FCRP. Therefore, the closure related studies that are in the current water licences are proposed to be removed.

The closure design criteria that are specified in the current water licences are not immediately affected by the activities of the closure Project Team and, therefore, no changes are proposed to these clauses.

Closing

We thank you for convening the May 13 meeting. Our intention in this letter has been to resolve the response items that were identified in the Meeting Summary Notes and trust that the information that is provided herein accomplishes this goal. We look forward to continuing to work through the review process with you.

Yours very truly,
DELOITTE & TOUCHE INC.
in its capacity as Interim Receiver of
ANVIL RANGE MINING CORP.

Shannon Glenn
Manager, Environmental Services
Enterprise Risk Services

c. Wes Treleaven, Deloitte & Touche Inc.

Ross River Dena Council

ROSS RIVER, YUKON
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RECEIVED
JUN 09 2003

DATE : June 9 - 2003

OUR FAX NUMBER : (867) 969 - 2405
E-mail rdc@yknet.yk.ca

COMPANY: DIAND

TO: Leslie Gomm

FAX NUMBER: 867 - 667 - 3216

FROM : Tosha E. Smith

NUMBER OF PAGES (COVER SHEET NOT INCLUDED) : 8

RE: FARO Water licence process review -

Leslie, here the non-technical review report accepted by Chief Jack Caesar, Councillor Jenny Caesar, and Councillor John Sekulich today June 9 - 2003 and approved for submittion - You can contact me for more at 969-2095 - Tosha

PLEASE CALL (867) 969-2278 IF TRANSMISSION IS INCOMPLETE

06/09/2003 MON 11:53 FAX 8679692405 ROSS RIVER DENA COUNCIL 001/009

Summary Report of the Review of the EAR for the Faro Mine Water License Application by the Ross River Dena Council

Prepared for: Environmental Directorate, DIAND

Prepared by: Ross River Dena Council

with assistance of

Testloa George Smith

Date: June 6, 2003

06/09/2003 MON 11:54 FAX 8679692405 ROSS RIVER DENA COUNCIL 002/009

Introduction

In the beginning of May, 2003, Leslie Gomm (Environmental Directorate, DIAND) and Shannon Glenn (Deloitte and Touche) met with the Ross River Dena Council in Ross River to explain the general terms of the applicant's Environmental Assessment Review (EAR) for the Faro Mine water license. During this meeting, Leslie Gomm informed the Ross River Dena Council that $6,000.00 was provided for the review of the EAR documentation and subsequent meetings with the Ross River Dena membership.

Within the limited timeframe and limited finances given, it was impossible to find technical assistance for the review of the documentation. Therefore, the review of the EAR was organized and carried out by the Ross River Dena Council without outside assistance. Concentrating on a review within the community enabled the Ross River Dena Council to facilitate a workshop with some of the elders, who had already participated in the Traditional Use Study (TUS) for the Faro Mine water license in April, 2003 and to organize a community meeting. The workshop and community meeting were held on May 29, 2003 in Ross River.

This report summarizes the comments, concerns and questions that were raised at these meetings, and reflects discussions with the Ross River Dena Council. As no technical assistance could be sought, this report could only be based on a non-technical review of the EAR.

The report is organized into 4 different sections. The first part summarizes the concerns and comments of the Ross River Dena which were collected during the workshop and the meetings. The second part highlights concerns that were raised during the TUS, and how they were used in the environmental assessment report. The third section of the report summarises technical questions that were raised by workshop and meeting participants. Leslie Gomm invited the Ross River Dena Council to collect technical questions and send them to her attention for response. Furthermore, as the meetings for the Water license application for the Faro Mine and for the Freshwater Supply Dam occurred in the same week, some comments were raised by workshop participants concerning the removal of the Freshwater Supply Dam. These comments have been added into the fourth section of this report.

Comments and Concerns raised in the Workshop and Meetings

In volume 1, chapter 10, four studies are proposed to gain a better understanding of the vegetation and soil contamination in the Faro Mine area, the water management of the Grum pit, the sludge

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management and the impacts of tailings in four areas of the mine. The Ross River Dena Council is very pleased about their planed integration into the study of the vegetation and soil contamination in the Faro Mine area (referred to as "Assessment of terrestrial effects related to the Faro Mine complex"). As outlined in the summary report of the TUS, the Ross River Dena have great concern about tailings blown in certain parts of the mine which were outlined in the map delivered as part of the TUS. The boundaries of dust in the area are greater then the boundaries used for the study undertaken last year. The Ross River Dena will be glad to contribute to this study.

In comparison to the study of terrestrial effects related to the Faro Mine complex, the other three studies do not mention a co-operation with the Ross River Dena Council. Section of the Final EAR Guidelines drafted by the Environmental Directorate states that Deloitte and Touche has to provide information to how it will consult with the relevant First Nations during the development, implementation and review of studies. As the Faro Mine is located on Ross River Dena traditional territory, the Ross River Dena must be included in all studies at the mine site and its surroundings. The Ross River Dena believe that their Traditional Knowledge (TK) input into the studies will greatly benefit the studies' outcome and will contribute to building a 'good neighbouring' relationship with the Interim Receiver and Government.

Moreover, the Ross River Dena Council states that it must be involved in all projects and activities developed and implemented at the mine site. Further, the Council maintains that it must be included in all aspects of the mine's reclamation from the beginning to its completion.

Training, employment and business opportunities are of great importance of the Ross River Dena. Having lived in the area for hundreds of years, being strongly family- oriented and culturally bound to the region, it is of great expense to Ross River Dena to leave their traditional area for work opportunities. However, employment and business opportunities in the area are rare. Currently, only a couple of Ross River Dena are working at the Faro Mine site, but many community members are seeking employment and training opportunities[1]. Therefore, the applicant must make the strongest commitment to employ Ross River Dena before accepting any other job application or tender. Further, training of Ross River Dena should be part of all care and maintenance activities on the mine site.

[1] The receiver states in the EAR that "On a seasonal basis, the Interim Receiver employs approximately 30 individuals from the communities of Faro and Ross River" (Volume 1, chapter 2.1.4) An actual breakdown of the individuals working at the mine into people from Faro and people from Ross River would demonstrate the actual short comes of employment opportunities for the Ross River Dena at the Faro Mine site compared to these of people from Faro.

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Further points of concern mentioned at the workshop and the meetings are water quality and the location of water monitoring sites. In the summary report and map of the TUS a drinking water location was pointed out. This location is used by elders to take water home[2]. As the creek (North Tributary) runs below the mining road into the 'Man Made Lake', questions were raised regarding its water quality. According to the figures provided in the EAR, no monitoring site is around this area. In addition, in the TUS summary report it was mentioned that one Ross River Dena stated that there is a need to place a monitoring site at the confluence of Anvil Creek and Pelly River. Independent of this study, an elder reported at the workshop that the water of the Anvil Creek entering the Pelly River is strangely coloured. Therefore, water (as well as its impact on the fish and wildlife) must be monitored along the Anvil Creek to its confluence with the Pelly River. Consequently, the spatial boundary of the assessment, particularly the Regional Study Area (RSA) as outlined in volume 3, chapter 2.1 must be expanded to encompass the Anvil Creek area to the Pelly River confluence.

As the Ross River Dena are still using the area for water and food, the community must be informed about any spill, disaster or accidents occurring on the mine site and its surroundings and affecting the land, water, vegetation, fish and wildlife. Furthermore, informing the Ross River Dena will avoid misinformation and the start-up of rumours.

This leads to the next point of concern, specifically communication and consultation of the proponent with the Ross River Dena Council. The workshop and meeting participants voiced great concern about the actual efforts the proponent will make after the water license has been issued. The communication approach of the proponent has been improved over the past months. However, there still are many misunderstandings. Communication and consultation seem to be perceived differently by the proponent and the Ross River Dena Council.

For example, the meeting attended by Leslie Gomm and Shannon Glenn for the presentation of the EAR has been described by both, Leslie Gomm and Shannon Glenn, as being successful and positive. The Ross River Dena Council's perception of the meeting was quite different; that is, the meeting was not successful in communicating challenges and problems faced by the Ross River Dena. Besides communication discrepancies, there are instances of lacking communication. In the

[2] The drinking water quality in Ross River in doubted by many Ross River Dena elders because of its taste and irritations (e.g. skin irritations) it causes. Therefore, many people, especially elders, get their drinking water from outside of town.

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beginning of the year, the Ross River Dena Council send a funding proposal to Deloitte and Touche discussing funding requirements for the reminder of the water license application process. To this point the Ross River Dena Council has not received any response. As to the need of consultation protocols, the Environmental Directorate, DIAND sent Leslie Gomm to explain the EAR draft Guidelines to the Ross River Dena and seek their input. DIAND understood this step as part of the consultation efforts with the Ross River Dena Council. However, to consult with somebody requires that all parties included in the consultation process are well informed. Without providing financial resources, the attendance of Leslie Gomm has been appreciated as an information session, but cannot be considered to be consultation.

Also, from the Ross River Dena point of view, there have been great problems with the integration of the TUS data into the EAR (see next section). As a result of insufficient communication, some data has been misrepresented or not been presented at all. As outlined by the Responsible Authorities (RA) for the Faro Mine water license application in the EAR Guidelines, "TK is, therefore, ... a valuable source of information for project assessment, as it can be used in combination with scientific information to confirm evidence or provide more detailed information than is otherwise available" (p.3). The Ross River Dena Council appreciates that time is sparse for the completion of the Faro Mine water license; however, would there have been a consultation protocol in place, this situation could have been avoided and more valuable data could have been included into this EAR.

Besides a clearly outlined consultation protocol, there is the need for a liaison person who would assist in overcoming communication short comes, assist Deloitte and Touche in finding qualified and interested people for training, employment and business opportunities at the Faro Mine site, help make contact with informed Ross River Dena for study projects, as well, has a good understanding of processes and knowledge of the activities at the Faro mine site. Such a liaison person could assist in keeping communication going between the Ross River Dena Council, the Interim Receiver and the Final Closure and Reclamation Plan team.

On a general note, the Ross River Dena Council acknowledges the funding which has been provided by Deloitte and Touche and DIAND for the participation of the Ross River Dena in this water license application process. However, it is difficult to work on Faro Mine issues and build momentum and trust if the funding is sporadic and insufficient, and the timeframe for community

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responses greatly restricted. For example, the funding provided for the review of the EAR did not allow for a technical review of the document.

Furthermore, it seems unfair that the Ross River Dena Council, which now for decades has been drastically impacted by the Faro Mine, has the smallest amount of money available to attend meetings and respond to applications. Last year, the Interim Receiver pointed out that nobody receives funding to attend TAC meetings (this particular TAC meeting was held in Whitehorse). However, most of the people (if not all) are paid through pay checks from governments and industry to prepare for and attend these meetings. As the meeting was held in Whitehorse, it made it even harder for the Ross River Dena to attend and participate. Clearly, there is an urgent need for a clear commitment to include the Ross River Dena in the processes at the Faro Mine through the provision of funding, and clearly outlined protocols (TK protocol, consultation protocol, and well outlined communication paths and responsibilities). One way would be to sign an agreement between Government, the Interim Receiver and the Ross River Dena. This protocol could deal with a number of issues mentioned above, such as training, employment, business opportunities, a liaison person, consultation and TK protocols and an understanding of communication paths and needs.

Discussion of TUS Data Use in the EAR

Based on the EAR Guidelines prepared by the RA, the project proponent had to incorporate TK into the EAR. A TUS study has been undertaken by the Ross River Dena in April 2003. The TUS included data collected through interviews with 16 individuals which had extensive knowledge of the Faro Mine area. Attention was given that key elders and current users of the mining area were included. The comments and concerns collected during the interviews were compiled in a summary report and locations of environmental concern located in a map. Unfortunately, the use of the data provided in the report was unsatisfactory. The Ross River Dena Council appreciates the lack of time available for the Gartner Lee Ltd. to finish the EAR; however, in the light of past treatment of their knowledge, the use of this TUS was disturbing. For example, the TUS stated that Ross River Dena elders are still using water around the mine area, and located the area on the map. However, the EAR states that no such information has been given.

Other concerns raised have not been mentioned in the EAR, such as concerns relating to barrels and cables laying in the greater mining area from past staking rushes. At least one of these barrels with sealed substance lies in a creek posing a potential threat to the surrounding and downstream

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environment. Also, all of the interview participants were greatly concerned about the impact of the emergency tailings area on animals, particularly on moose which seem to use it as an animal lick. To the knowledge of the Ross River Dena, this area is known for several spills which constantly have been covered up, but never cleaned-up nor studied. The Ross River Dena are glad to see that a study is proposed to look at the area in question ("Investigation of Tailings outside of the Rose Creek Tailings Facility" volume 1, chapter 10.4); however, their concerns in this particular area have not been acknowledged, and no comments in the EAR indicates if and how the Ross River Dena are included in the design and carry-out of this study. Furthermore, the Ross River Dena feel strongly about fencing the area to avoid moose traveling through this area until studies to the impact of these spills on the animals have been tested.

Other concerns summarised in the TUS report were mentioned in the EAR (volume 3, chapter 3.4.2; however, no indication was given as to what the response of the proponent to these topics will be. One of these concerns is the need for a water monitoring site on the confluence of Anvil Creek and Pelly River (indecently, this point was raised again at the workshop for the review of the EAR by another person). The proponent states in volume 3 chapter 2.4.2.2 that "Traditional knowledge is used in the determination of VECCs and indicators and carries the same weight in environmental assessment as scientific knowledge". It is not apparent how this has been accomplished in the EAR.

The Ross River Dena Council contacted Gartner Lee Ltd., to clarify shortcomings and questions regarding the use of the TUS in the EAR. As a result of this communication, Gartner Lee Ltd. will provide an amendment to the EAR. Nevertheless, the Ross River Dena Council feels that this incidence could have been avoided through communication and co-operation.

Technical Questions to the EAR

- Have studies been undertaken looking at the birds in the Faro Mine area?
- How does the bioremediation cell work?
- What is Acid Rock Drainage and which implication has it on the land, plants, fish and animals?
- Why are the water monitoring sites located where they are and what do they measure?
- What are the water cycles in the Grum Pit and Vangorda Pit area? Where is water from these sites discharged to?
- Which information is available regarding the tailings?

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- Rumours pointing to a dead moose found in the tailings in the past months. Is this right and if, what did it die on?
- What is the composition of the material used for the haul road, and which impacts can the material used have on the environment?

Some Ross River Dena members are greatly interested in taking a mine tour. Would that be possible to organise?

Comments and Concerns regarding the Freshwater Supply Dam Water License Application

Regarding the removal of the Freshwater Supply Dam, the Ross River Dena would like to point out that there is a beaver family living downstream from the dam. Have these beavers been considered when planning for the breach of the dam? Furthermore, what are the anticipated impacts of the removal of the dam on the grayling in the creek and the moose in the area? Have they been considered and how have they been considered?

When replanting the area, the Ross River Dena Council strongly opposes the use of any plants that are not local to the area. Instead, effort should be undertaken to use the plants which where in the area before. Ross River Dena elders can provide information to the traditional local plants of the area.

Conclusion

This report summarises the comments, concerns and questions made by the Ross River Dena membership during the non-technical review of the EAR for the Faro Mine water license application submitted by the Interim Receiver in April, 2003. While some of the concerns were specific to studies and activities proposed, this report also outlines difficulties and challenges the Ross River Dena face when dealing with Faro Mine matters. Other comments and concerns may be outstanding as many technical questions are still unanswered.

The Ross River Dena, who are part of the Kaska Dena, have unsurrendered aboriginal rights, titles and interests in and to the Kaska traditional territory. The Kaska traditional territory includes the land on which the Faro mine is located. The federal government has not only fiduciary obligations towards the Ross River Dena, but also is the sole financial supporter of the Faro Mine. Therefore, it must take concrete measures to protect the rights of the Ross River Dena in this project through the provision of resources and development of procedures which enable the Ross River Dena to truly participate in Faro Mine activities.

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To:	Office/Company:
Chief Jack Caesar	Ross River Dena Council
Fax No:	
867-969-2405	
From:	**Date:**
Shannon Glenn	July 3, 2003
Number of Pages (including cover sheet):	**To confirm receipt, or if you do not receive all pages, please call:**
3	(416) 601 6150

Comments:

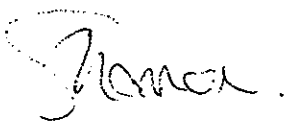
Dear Chief Caesar,

Please find attached a letter, which we gave to George and Jason last week during the Technical Workshop in Whitehorse.

George, Jason and I, as well as Leslie Gomm, discussed the contents of the letter and the June 6 2003 report titled "Summary Report of the Review of the EAR for the Faro Mine Water License Application by the Ross River Dena Council". We also discussed what clarifications the Interim Receiver would provide to Leslie Gomm regarding the EAR.

We hope that it will be possible for members of the community to attend the TAC meeting on July 9. Also, Mr. Treleaven and myself could be available on July 10 at your convenience for a visit to Ross River if you would like to discuss the above-mentioned documents or other matters.

Best regards,



Deloitte Touche Tohmatsu

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June 22, 2003

Chief Jack Caesar
Ross River Dena Council
Ross River, Yukon
Y0B 1S0

Dear Chief Caesar:

Anvil Range Mining Corporation ("Anvil Range") – Comments on Environmental Assessment Report related to the Renewal of the Water Licence

We are writing to acknowledge discussions that were held with Ms. Doris Dreyer on May 30, 2003 in a conference call with Mr. Stephen Morison and Ms. Sheila Greer in regards to the above Environmental Assessment Report (EAR), specifically, the Traditional Use sections in Volumes 2 and 3.

As part of the Environmental Assessment Report, Ms. Dreyer and Mr. Testloa George Smith gathered Traditional Use information as well as community concerns related to this project for Anvil Range Mining Corporation (Interim Receiver). Some of the information they collected was presented in a summary report titled "*Ross River Dena Traditional Use Study for the Faro Mine Water License Application (2004 to 2008)*". The Dreyer & Smith report was used by the environmental assessment team in preparing the EAR relating to the water licence renewal for the Anvil Range Mine complex.

During the May 30 call, concerns regarding the Environmental Assessment Report were expressed by Ms. Dreyer, and it was agreed that a summary of the discussions would be forwarded to the Ross River Dena Council (RRDC). We understand that the points raised by Ms. Dreyer during this call included:

- Water quality testing in traditional areas of concern to the RRDC, including the confluence of Anvil Creek and the Pelly River;
- Access to hunting areas beyond the security gates at the mine site;
- Overall effect of the tailings areas and safety concerns (e.g. open pits) for wildlife that migrate through the Anvil Range Mine Complex; and
- The concern of litter such as barrels and rusty cables across the Anvil Range Mine complex.

We would like to thank you for bringing these concerns to our attention and hope we will be able to discuss these further either during the technical workshop scheduled for June 24 and 25, 2003, which we understand will be attended by representatives of the Ross River community and/or the TAC meeting, which is scheduled for July 9 2003. During the week of the TAC, we could also travel to Ross River on July 10th, if you prefer, to discuss these matters. We propose that we begin our discussion by reviewing together Section 3.4 of Volume III of the EAR.

We also propose that these discussions take place in the company of Ms. Leslie Gomm, YTG Environmental Assessment Unit, so that she is fully aware of outstanding issues identified by the community of Ross River in relation to the environmental assessment. It is important to remember that this environmental assessment for the water licence renewal relates to care and maintenance activities over the next 5 years. The scope of the EAR is set accordingly and does not consider broader issues that typically would be considered during the preparation of a reclamation and closure plan. For example, reclamation measures for open pits at the Anvil Range Mine complex have not been developed at this time, but certainly will be during the preparation of the Final Closure & Reclamation Plan.

We look forward to discussing the items raised by Ms. Dreyer, as well as to ongoing dialogue with the Ross River Dena Council regarding our administration of this property.

Yours very truly,
DELOITTE & TOUCHE INC.
in its capacity as Interim Receiver of
ANVIL RANGE MINING CORP.

Shannon Glenn
Manager, Environmental Services
Enterprise Risk Services

c. Leslie Gomm, YTG Environmental Assessment Unit
Stephen Morison, Gartner Lee Limited
Wes Treleaven, Deloitte & Touche Inc.

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July 22, 2003

Ms. Leslie Gomm
Manager, Project Assessment
YTG Executive Council Office
Environmental Assessment Unit
P.O. Box 2703
Whitehorse, Yukon
Y1A 2C6

Dear Leslie:

Re: Anvil Range Mining Corporation ("Anvil Range")

Thank you for forwarding to us the comments you have received to date regarding the Environmental Assessment Report ("EAR") we submitted to your department at the end of April 2003 relating to the renewal of the Anvil Range water licences. In particular, we received from you the 'Summary Report of the Review of the EAR for the Faro Mine Water License Application by the Ross River Dena Council' ("Ross River EAR Comments"). Further to a discussion of this report with yourself and two representatives of the Ross River community (Mr. George Smith and Mr. Jason Acklack) on June 25 2003, we are writing to provide clarifications that have been requested of the Interim Receiver relating to the integration of Traditional Knowledge and First Nation Concerns into the EAR.

We have been grateful for the input of the Ross River community at each stage of the environmental assessment process as well as for their comments on the EAR. This input was communicated via meetings held since the beginning of the EAR process, a community technical and non-technical review of the May 2002 Project Description as well as a traditional knowledge gathering exercise, which was held at the end of March 2003. The latter was summarized in a report titled 'Ross River Dena Traditional Use Study for the Faro Mine Water Licence Application (2004 to 2008')("Ross River TUS Report").

The means by which we integrated the community input received into the EAR is described in Section 1.2.3 of Volume II of the EAR and Section 3.4.3. of Volume III of the EAR. Specifically, information relating to community use of the mine area and its surroundings was included in Section 2.9 and 2.10 of Volume II of the EAR. Community concerns regarding current and future care and maintenance activities at the mine site were summarized in Section 3.4.2. of Volume III of the EAR.

Below, we provide clarification regarding care and maintenance plans as they relate to seven areas raised by the community in the Ross River TUS Report, as well as on other outstanding points highlighted in the Ross River EAR Comments.

Ross River TUS Report

The issues identified in the Ross River TUS Report included: 1) tailings pond and spillway; 2) pit security for animals; 3) litter; 4) water quality of creeks and lakes; 5) access to hunting area; 6) work for community members; and 7) decision-making power and information sharing between Ross' River Dena and company/government. In general, the information reflected in the EAR was included to the extent that it was relevant to care and maintenance activities and/or it was within the areas of responsibility of the Interim Receiver. As a result, not all of the points raised were included in the EAR. Below, we address all seven issues in turn.

1. **Tailings pond and spillway**: we understand that community concerns exist regarding impact of the tailings on wildlife. Specifically, the Ross River TUS Report evidences moose tracks on tailings, two instances of moose mortality in the tailings pond, a sick moose shot near the property some years ago and moose feeding along the spillway. We have made a broad interpretation of these comments as including not only the tailings area and spillway but also the emergency tailings area. In addition, concerns were raised regarding the impact of the tailings on vegetation as evidenced, in particular, by dust.

   Section 3.4.2. of Volume III of the EAR references a proposed terrestrial effects study relating to the effects of the tailings and other potential sources of wind blown contaminants on ecological and human health. The input of the Ross River community will be key to determining the scope of the study (extent of sampling, specific focus, etc.).

   In the longer term, these concerns tie into closure issues. The Rose Creek tailings area is one of the most important parts of the property to consider for closure and will be part of the investigations and studies directed by the Type II Mines Project Office.

2. **Pit security for animals**: the identified concern related to the safety of animals that traverse the property (particularly sheep on the Vangorda/Grum plateau).

   Wildlife safety as it relates to open pits is a closure concern and has been communicated to the Type II Mines Project Office. To date, no wildlife mortalities related to the open pits have been documented.

3. **Litter**: barrels and other litter resulting from past exploration were identified.

   The location of these barrels is included in the attached revised Traditional Knowledge Map of the Local Study Area. This concern should have been identified in Section 3.4.2. of Volume III of the EAR. The identified locations of the barrels will be investigated by the end of August 2003 by mine site personnel to assess their nature, to whom they may have belonged and the feasibility of removal.

4. **Water quality in creeks and lakes:** the Ross River TUS Report identified that certain creeks were used for drinking water but that some interviewees did not touch the water in the area at all. Monitoring (including at the confluence of Anvil Creek and Pelly River) and the communication of the monitoring results were also raised.

The reported distrust of the water quality in the area, the need for monitoring at the confluence of Anvil Creek and Pelly River and the need for communication of results were acknowledged in Section 3.4.2. of Volume III of the EAR. The location of the water taking is identified on the attached revised map. Since the publication of the EAR, we have looked into the feasibility of sampling at the Anvil/Pelly confluence, in relation to other monitoring commitments, and we commit (subject to funding) to sampling Anvil Creek at the Pelly River when we sample R4, R5 and R6 (mouth of Rose Creek).

Section 2.1.5 of Volume I of the EAR describes the proposed communication of monitoring information, including the notification process for emergencies.

5. **Access to hunting areas**: a request was made relating to having access to the haul road with trucks for hunting purposes. Hunting pressures caused by the mine road access was also mentioned.

   For the security of visitors and employees, access to the haul road and other areas of the mine beyond the gatehouse is restricted and will continue to be restricted.

   The access road to the mine is a public road. As continued access to the mine from Faro is required for care and maintenance, concerns regarding hunting pressures in the general area was identified as a closure concern and communicated to the Type II Mines Project Office.

6. **Work for Ross River Dena**: employment of Ross River community member was identified as a key concern.

   While direct socio-economic impact is not typically included in the scope of an environmental assessment, this community concern was acknowledged in Section 3.4.2. and 3.4.3 of Volume III of the EAR. The Interim Receiver intends to continue to make efforts to increase opportunity for employment at the mine site. In particular, proposed new activities described in Section 6 of Volume I of the EAR will contribute to this objective. In order to provide fair access to opportunities, the Interim Receiver is currently working with the Economic Development Branch of the Ross River Dena Council regarding the development of employment opportunities.

   On July 10, 2003, during a community meeting with the Interim Receiver, further concern regarding economic development was expressed. In response, the Interim highlighted that large contracts will only begin to be awarded in relation to this site following the completion and approval of a closure plan (in 2008). In the meantime, the Interim Receiver intends, to the extent that funding is available, to advance reclamation initiatives that are in harmony with the eventual closure plan. The objective is to increase environmental protection at the site and to stabilize employment in the region, build capacity and provide training opportunities upon which individuals and local businesses will be able to build by the time larger contracts will be available in 2009. The Interim Receiver described 2003 projects, which have had a Ross River community involvement:

   - Two individuals from the community of Ross River are employed on a full time basis in the *water treatment* area (Ron Nelly and Dean Bolton).

- To minimize sedimentation following the planned breach of the Fresh Water Supply Dam ("FWSD"), a *seeding programme* was undertaken in late June 2003, which involved five Ross River individuals over twenty days. A second seeding is planned for late August/early September when the water level behind the dam will have been drawn down further. A *live fish transfer*, to transfer fish from the FWSD reservoir to a location approved by the Department of Fisheries and Oceans, will be undertaken under the responsibility of Gartner Lee Limited (Bruce Ford) and will involve members of the Ross River community.
- Some projects were carried over from 2002 as they had been delayed due to rain in July and August 2002. These projects include the *top dressing of the Intermediate and Cross Valley Dams*, which was initiated last year and completed in May 2003 by T. Moon Construction. This work involved four individuals for a month. Mr. Moon is also scheduled to complete the *refurbishment of the Faro Flume*, which had also been previously planned for 2002. This work will involve 10 to 12 individuals.
- Mr. Moon has been awarded a contract to *remove the BXL and Brentag (previously StanChem) buildings* and to remove the surrounding contaminated soil to the Faro waste rock dump.
- The Interim Receiver met with Mr. John Etzel (Economic Development of Ross River Dena Council) and issued a contract to remove *core samples* from the shacks and organize them on skids and demolish the buildings in this area. This involved four weeks of work for seven individuals from the community.

The annual budget planning and approval process was described. It was highlighted that the 2004 season will be a transition year for care and maintenance activities because the water level in the Vangorda pit will have been reduced to the point where pumping will likely not be required. To ensure staff stability, the Interim Receiver is making suggestions to the government for projects that would be in harmony with closure planning. The biggest project for the next few years, subject to funding, would be building demolition. Targeted buildings include the concentrate load out building and portions of the garage. The Interim Receiver has met with the Dean of Yukon College regarding the training of a team who would be responsible for building demolition. Required skills include rigging, steel handling, cutting, safety, etc. The Interim Receiver has written to Mr. Ian McGregor, DIAND Headquarters, to obtain support to initiate the training programme this year.

Other general initiatives mentioned during the meeting include supporting a 'pool of labour' concept to accommodate community members when absent for a period of time (e.g., hunting season) and the facilitation of accommodation in the Town of Faro for Ross River community members. The Interim Receiver has and will continue to encourage outside contractors to utilize local labour and services within the communities of Ross River and Faro.

7. **Decision-making power and information sharing between Ross River Dena and company/government**

In the Ross River TUS Report, the community expressed that it feels distanced from day-to-day mine activities. Evidence cited included having "little awareness regarding the work undertaken, the level of water and land contamination, or the security of taking animals in the mine area". In addition, they expressed concern regarding the level of involvement by the Ross River Dena in decision-making processes at the Faro mine. The need to build communication paths, which allow traditional users of the area to practice their activities safely, was highlighted. In particular, the need for the development of protocols between the Ross River Dena and company/government was mentioned.

In Section 3.4.2. of Volume III of the EAR, we had primarily referenced these concerns by mentioning that there is a need for increased communication and consultation between the community and the Interim Receiver, including the sharing of information regarding the quality of water and the need for notification of emergencies at the site. In Section 2.1.5 of Volume I of the EAR ("Project Management"), we reference the intent of the Interim Receiver to continue to maintain lines of care and maintenance consultation through the Technical Advisory Committee ("TAC") via regular meetings and updates. In particular, this would include advising the TAC of its budget approvals in March of each year, holding an annual site meeting outlining care and maintenance activities with a site tour. To that end, for example, a TAC meeting was held on July 9, 2003, which was attended by the Selkirk Renewable Resources Council. We regretted that members of the Ross River community were not available to attend. Also, mid-year reports will be provided to the TAC members to keep them apprised of site activities.

Section 2.1.4. further mentions that, on reasonable notice, the Interim Receiver has and will continue to accommodate requests for tours of the mine. The Interim Receiver will also inform, with notice, both the Faro Town Council and the Ross River Dena Council of planned attendance at the mine by the Interim Receiver, with the intent of providing an opportunity to meet if desired by these parties. For example, the Interim Receiver attended in the community of Ross River on July 10, 2003 to answer questions regarding activities at the property.

Regarding the need for communication of monitoring information, we referenced our intent to circulate copies of our reports to the Yukon Territory Water Board to the Town of Faro, the Ross River Dena Council and Selkirk First Nations. These reports describe water monitoring activities and results as well as environmental care and maintenance activities, which take place at the mine site each year. Information about the level of contamination at the site will also be exchanged via the participation of the Ross River community in the terrestrial effects study referenced above (Section 1 of this letter). In the case of any emergency at the site, the mine site manager has contact numbers to advise potentially affected parties immediately. Members of the TAC will be advised as soon as practically possible.

The Interim Receiver recognizes that it may not always be possible, due to resource constraints, to fully disseminate within the Ross River community information that is provided by the Interim Receiver regarding care and maintenance activities and monitoring as well as regarding site projects that involve the community of Ross River. This challenge is compounded by the fact that different community individuals may be interested in different aspects of the administration of this property. To that end, since the publication of the EAR, the Interim Receiver has been exploring the feasibility of engaging a member of the Ross River community as a part-time Communications/Liaison Officer who would assist in addressing these challenges.

A final layer of information regarding the site relates to site characterization and closure planning for the site. As the EAR relates to care and maintenance activities planned for the next licence term, the dissemination of this type of information (studies) was not discussed in the EAR. We understand from the Type II Mines Project Office that their next step is to discuss with the community, the process by which the affected First Nations will participate in the closure planning process. We were pleased that the community sent two representatives to the abandonment and reclamation technical workshop, which took place June 24-26 2003 in Whitehorse.

Ross River EAR Comments

The following provides clarification regarding points raised in the Ross River EAR Comments, which are supplementary to the points raised in the Ross River TUS Report.

1. Care and maintenance studies

In addition to the terrestrial effects study referenced in Section 12 of Volume I of the EAR, the community references the need to incorporate traditional knowledge in the other three studies listed in Section 12 of Volume I of the EAR (Grum Pit water management, sludge management and characterization of the uncontained tailings).

While the Interim Receiver has identified these studies as being of a technical engineering nature, the Interim Receiver will seek out and incorporate traditional knowledge to the extent that scope permits and will ensure that the results will be circulated to the TAC members and discussed at future TAC meetings.

2. Monitoring of water quality in North Tributary of FWSD Reservoir

The location of water taking is indicated on the revised version of the Traditional Use map attached. As the location is downstream of an undisturbed area of the property, there is not a need to monitor this location from an environmental perspective. As the manager of a mine property, the Interim Receiver cannot assume responsibility for monitoring water from the point of view of drinking water quality.

3. Funding for participation in EAR consultation and closure planning

Regarding funding relating to consultation on the EAR, while the funding for the October 2002 was provided via the Interim Receiver, the latter was informed by DIAND that funding for this type of activity should take place via the then DIAND Environment Directorate and/or the current YTG Executive Council Office, Environmental Assessment Unit (EAU). As such, the Interim Receiver understands that these comments are addressed primarily to the EAU.

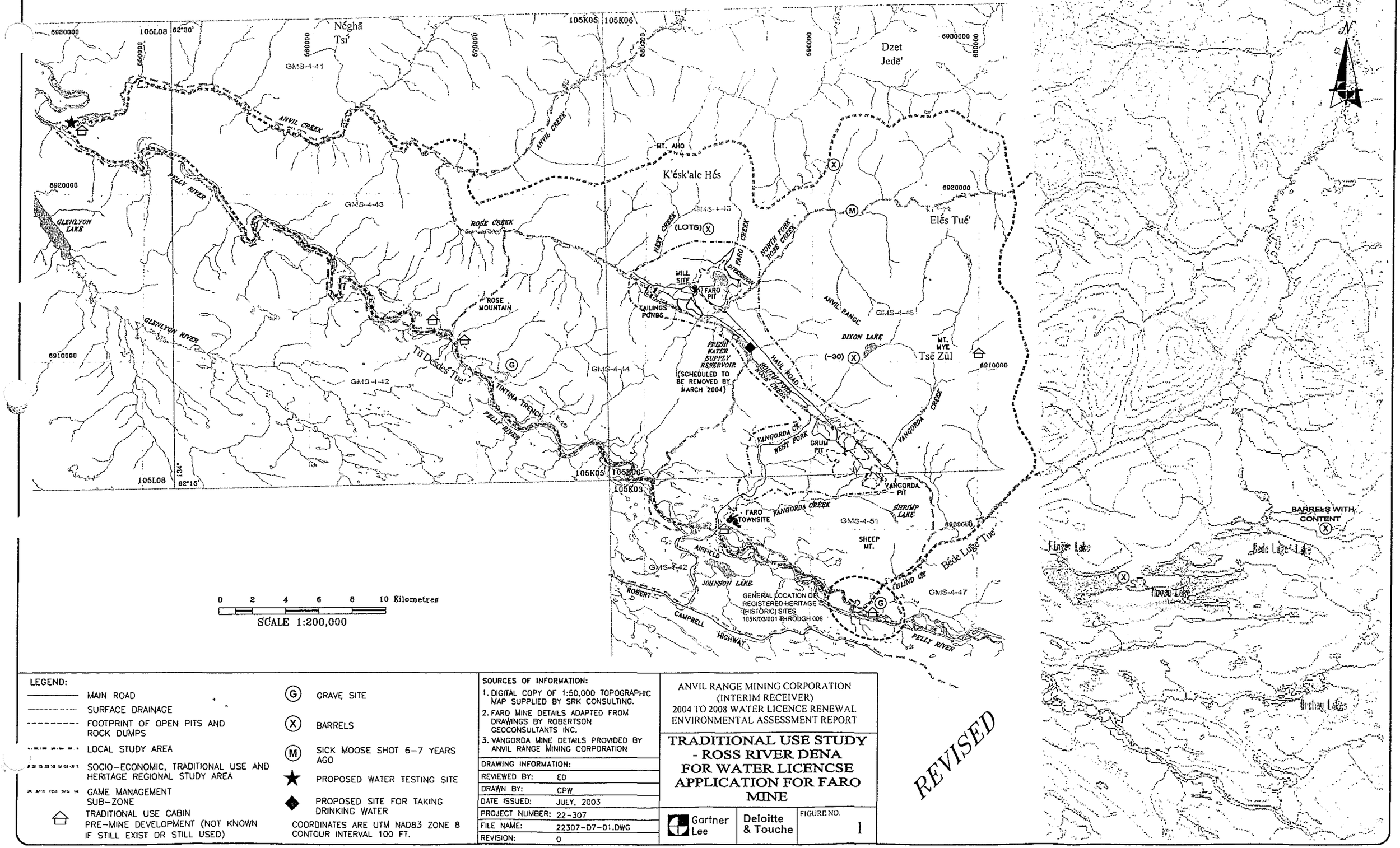
Regarding funding related to consultation for the closure planning process, closure planning is the responsibility of the Type II Mines Project Office. We understand that a funding mechanism process has been put in place via the Development Assessment Act process.

We are grateful for this opportunity to provide these additional clarifications on our EAR submission and invite you and/or members of the Ross River community to contact us if further clarification is required.

Yours very truly,
DELOITTE & TOUCHE INC.
in its capacity as Interim Receiver of
ANVIL RANGE MINING CORP.

Shannon Glenn
Manager, Environmental Services
Enterprise Risk Services

c. Joanna Ankersmit, DIAND Headquarters
Chief Jack Caesar, Ross River Dena Council
Marg Crombie, YTG, Type II Mines Project Office
Robert Lauer, DIAND Headquarters
Stephen Morison, Gartner Lee Limited
Dave Sherstone, DIAND, Type II Mines Project Office
Wes Treleaven, Deloitte & Touche Inc.



LEGEND:

- MAIN ROAD
- SURFACE DRAINAGE
- FOOTPRINT OF OPEN PITS AND ROCK DUMPS
- LOCAL STUDY AREA
- SOCIO-ECONOMIC, TRADITIONAL USE AND HERITAGE REGIONAL STUDY AREA
- GAME MANAGEMENT SUB-ZONE
- TRADITIONAL USE CABIN
- PRE-MINE DEVELOPMENT (NOT KNOWN IF STILL EXIST OR STILL USED)
- (G) GRAVE SITE
- (X) BARRELS
- (M) SICK MOOSE SHOT 6-7 YEARS AGO
- ★ PROPOSED WATER TESTING SITE
- ◆ PROPOSED SITE FOR TAKING DRINKING WATER

COORDINATES ARE UTM NAD83 ZONE 8
CONTOUR INTERVAL 100 FT.

SOURCES OF INFORMATION:

1. DIGITAL COPY OF 1:50,000 TOPOGRAPHIC MAP SUPPLIED BY SRK CONSULTING.
2. FARO MINE DETAILS ADAPTED FROM DRAWINGS BY ROBERTSON GEOCONSULTANTS INC.
3. VANGORDA MINE DETAILS PROVIDED BY ANVIL RANGE MINING CORPORATION

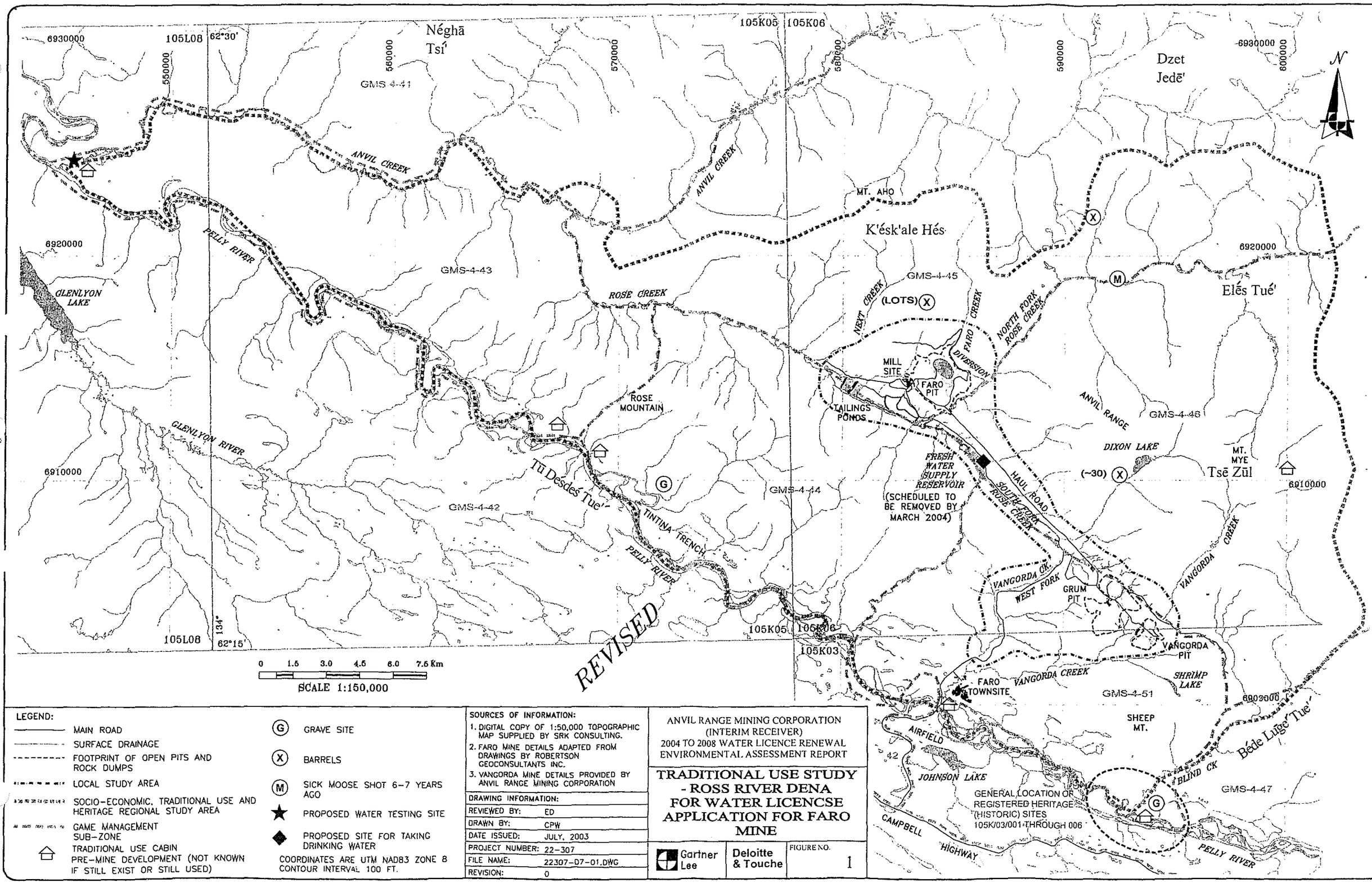
DRAWING INFORMATION:	
REVIEWED BY:	ED
DRAWN BY:	CPW
DATE ISSUED:	JULY, 2003
PROJECT NUMBER:	22-307
FILE NAME:	22307-D7-01.DWG
REVISION:	0

ANVIL RANGE MINING CORPORATION
(INTERIM RECEIVER)
2004 TO 2008 WATER LICENCE RENEWAL
ENVIRONMENTAL ASSESSMENT REPORT

TRADITIONAL USE STUDY - ROSS RIVER DENA FOR WATER LICENCSE APPLICATION FOR FARO MINE

Gartner Lee | Deloitte & Touche | FIGURE NO. 1

REVISED



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ANVIL RANGE MINING CORPORATION
(INTERIM RECEIVER)
2004 TO 2008 WATER LICENCE RENEWAL
ENVIRONMENTAL ASSESSMENT REPORT

TRADITIONAL USE STUDY - ROSS RIVER DENA FOR WATER LICENCSE APPLICATION FOR FARO MINE

Gartner Lee | Deloitte & Touche | FIGURE NO. 1

Indian and Northern Affairs Canada
Affaires indiennes et du Nord Canada

CANADA REMEMBERS
LE CANADA SE SOUVIENT

Type II Mines Project Office
Northern Affairs Program
Suite 210 - 419 Range Road
Whitehorse, Yukon
Mailing Address: #300 - 300 Main Street
Whitehorse, Yukon, Y1A 2B5

Your file Votre référence

Our file Notre référence
Anvil Range Mining -
Abandonment Planning

August 04, 2003

Mr. Wes Trebaven, Senior Vice-President
Deloitte & Touche Inc. LLP
Suite 1900
79 Wellington Street West
P.O. Box 29 TD Centre
Toronto, Ontario, M5K 1B9

Fax # (416) 601-6390

Dear Mr. Trebaven:

RE: WATER LICENCE RENEWAL, ANVIL RANGE MINES, FARO, YUKON - RELOCATION OF OXIDE FINE DUMPS AT FARO AND VANGORDA

This letter is to bring to your attention concerns raised during the environmental assessment screening of the above aspect of the relicencing and suggest a possible means for resolution.

During the environmental assessment process a number of reviewers raised concerns over what has been termed "interim reclamation" of; a) the oxide fines left near the Faro crusher, and, b) the oxide fines currently on the Vangorda waste rock dump. In the present licence application it is proposed to consolidate the Faro fines in a central location and cover both these and the Vangorda fines with one metre of either silt or clay.

The Type II Mines Office understands that the environmental assessment reviewers raised the following:

A) "Double handling" of fines may result in increased release of contaminants.

B) Costs involved in moving these materials prior to approval of a final closure plan may not be warranted.

C) The proposed method of storage (i.e. no containment, no impermeable bed cover) would not prevent contamination of the underlying ground.

D) The proposed one metre cover is inadequate to deal with infiltration and would be compromised by frost action. This may especially be the case if silt is used rather than compacted clay.

Coupled with a lack of information on the likely long-term reclamation of these fines, the Responsible Authorities (RA's) were unable to adequately assess the environmental effects. The reviewers have requested an expanded discussion of the options and a clarification of the objectives/goals. One suggestion is relocation to the respective open pits, with or without lime addition.

However, to investigate and report on these concerns will require significant time and resources and will move discussions well into those for final abandonment measures and objectives. If such discussion were to become a significant point of contention at the October, 2003 water licence public hearing, it could result in the Board setting out terms in a water licence which are not warranted, overly stringent or excessively costly.

There is no indication that leaving the oxide fines in their present locations will cause increased or irreparable additional environmental effects in the next several years. Further, moving and/or covering the oxide fines, providing there is no impact on the water resource does not require licencing under the *Waters Act (Yukon)*. Action can be taken independently of the water licence process. Using this approach would allow regulators and stakeholders to develop actions which fit the concept of progressive abandonment. If done as the final closure plan moves towards completion it would provide additional assurance that any reclamation of the oxide fines will meet overall abandonment goals.

Given the present uncertainties and concerns, the costs of moving and/or covering the fines will be subject to intense scrutiny by senior management in both DIAND and the Government of Yukon.

As a result of the above considerations, combined with tight timelines for the October Water Board public hearing the Type II Mines Project Office recommends the Receiver withdraw this component from the licence application.

If you wish clarification or further discussion on this matter, please contact me, or alternatively Ms. Leslie Gomm, A/Director, Assessment & Abandoned Mines, Type II Mines Office, at your convenience.

Yours sincerely,

Dave Sherstone

David A. Sherstone
Team Leader (DIAND) Type II Mines Project Office

cc: Leslie Gomm, GY, Type II Mines Project Office

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August 6, 2003

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Team Leader (DIAND) Type II Mines Project Office
Type II Mines Project Office
Northern Affairs Program
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Whitehorse, Yukon Y1A 2B5

Dear Dave:

Anvil Range Mining Corporation ("Anvil Range") – Planning for Oxide Fines

Thank you for your letter of August 4 2003 to Mr. Treleaven regarding concerns raised by the reviewers regarding the proposed plans for oxide fines at the Anvil Range property during the next licence term.

In the Environmental Assessment Report ("EAR") (Volume I), we had indicated our intent to cover the fines as an interim measure for the period of 2004-2008. Subsequent to our filing of the EAR on April 29 2003, we attended a Responsible Authority ("RA") workshop organized by Ms. Leslie Gomm on May 13 2003. The workshop had been organized with the goal of providing a forum for the RA's to ask for clarifications of the Interim Receiver. During the meeting, points were raised regarding the oxide fines, which reflect those raised in your letter.

Subsequent to the May 13 meeting, the Interim Receiver wrote to Ms. Gomm to provide clarifications on points raised at the meeting and to provide amended wording for the EAR. The letter is attached for your reference and the following excerpt is brought forward:

6. Provide an expanded discussion on the options for the oxide fines piles and clarification on the objectives of doing this work

The following wording is suggested for Volume I of the EAR:

6.3.2 Oxidized Fines near the Crusher Stockpile (new last paragraph)
and
6.3.3 Oxidized Fines in the Vangorda Rock Dump (new last paragraph)
Nonetheless, other options for interim reclamation of these piles may be brought forward prior to the work being undertaken and any other such options will be considered for implementation. In addition to providing short term mitigation of effects, another key consideration for selection of the preferred interim reclamation measure will be to complement, to as great a degree as possible, the work of the Closure Project Team.

This amendment was carried forward in our application to the Yukon Territory Water Board, filed May 20 2003. In the introduction to Section 6 of this application, we mention that:

> *"For activities that require an engineering design, a conceptual design is provided here and it is proposed that a detailed design would be developed prior to implementation in consultation with regulators and interested parties according to the design and intent of the consultation processes described in Section 2.1.5.*
>
> *Some of the proposed new activities will require various permits and authorizations but may not require a water licence. Nonetheless, all of the proposed new activities are currently undergoing environmental assessment and all of the information on these activities is provided below for ease of reference".*

In keeping with the above, we did not make a reference to the oxide fines in the proposed new licence wording, which we included with our application.

Closing

In summary, while we had initially referenced intent to consolidate and cover the oxide fines, we subsequently qualified this intent by adding that we would work with the Type II Mines Project Office to devise any other alternate solution that would be deemed in harmony with long term planning. We agree with you that action taken regarding the oxide fine could be taken independently of the water licence process, within a regulatory process that would be applicable to the solution that is eventually developed in collaboration with your office.

Thank you for sharing your concerns and we hope that we have provided the clarifications you were seeking. We look forward to continuing to work with you and your office on matters related to this property.

Yours very truly,
DELOITTE & TOUCHE INC.
in its capacity as Interim Receiver of
ANVIL RANGE MINING CORP.

Shannon Glenn
Manager, Environmental Services
Enterprise Risk Services

c. Marg Crombie, Government of Yukon, Type II Mines Project Office
Leslie Gomm, Government of Yukon, Environmental Assessment Unit
Wes Treleaven, Deloitte & Touche Inc.

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Deloitte & Touche

June 22, 2003

Ms. Leslie Gomm
Project Assessment Manager
Environmental Assessment Unit
Executive Council Office
P.O. Box 2703
Whitehorse, Yukon Y1A 2C6

Dear Leslie:

Anvil Range Mining Corporation ("Anvil Range") - Follow-up to May 13 2003 EAR workshop

We have received your document *Anvil Range Water Licence Renewal, Meeting Notes – May 13, 2003,* (the "Meeting Summary Notes"), which summarize the meeting that was held on May 13 in Whitehorse to discuss the report *Anvil Range Mining Corporation (Interim Receivership), 2004 to 2008 Water Licence Renewal, Environmental Assessment Report, April 2003* (the "EAR"). We note that the Meeting Summary Notes are informal in nature and represent a high-level description of the major topics discussed.

This letter provides responses to each of the 13 specific response items that are documented in the Meeting Summary Notes. The intent of this letter is to resolve the action items that were raised and to assist in the completion of the screening of the EAR. Where appropriate, and for most of these items, a resolution to the response item was also subsequently included into the Water Licence Renewal Application Report (the "Application Report"), which was submitted to the Yukon Territory Water Board on May 20 2003.

One of the topics that were discussed at the May 13 meeting was the global or overriding goal of the care and maintenance activities. The overriding goal of the proposed care and maintenance activities is to provide short-term mitigation of environmental effects related to the existing mine facilities, while a Final Closure and Reclamation Plan is developed by the government Closure Team. The meeting participants raised the point that the overriding goal should also aim to minimize or eliminate increases in long-term liabilities at the site. We have selected our proposed care and maintenance activities with this additional objective in mind but we agree that we could have made our intent to that effect more explicit. As a result, we suggest the following new wording for Section 5.1 of Volume 1 of the EAR:

5.1 Overview of the Care and Maintenance Plan (first two sentences of paragraph 1)
The fundamental objective of the Care and Maintenance Plan is to provide short-term mitigation of environmental effects by ensuring that the terms and conditions of the water licence are achieved. Activities are also chosen to prevent, to the extent possible, an increase in long-term liabilities at the site and to not constrain long term closure planning. ...

Response Items from the Meeting Summary Notes

1. Reword section on Sludge Management to provide clarification

The following wording is suggested for Volume I of the EAR:

5.2.1.4 Management of Treatment Sediments from the Mill Water Treatment System
The treatment sediments ("sludge") from the mill treatment system are stored in a clarifier tank in the mill and periodically removed to the Intermediate Impoundment of the Rose Creek Tailings Facility to maintain storage capacity. A study is proposed for 2003, as described in this volume under Proposed Studies, that will determine the most appropriate sludge management plan for the duration of the care and maintenance period (i.e. until the FCRP is developed and implemented).

5.2.4.2 Management of Treatment Sediments from the Cross Valley Pond Water Treatment System
An estimated 13,100m^3 of treatment sediments that had accumulated in the Cross Valley Pond at the base of the inflow spillway were excavated and removed to the Faro Main Pit in the winter of 2001/2002. A study is proposed for 2003, as described in this volume under Proposed Studies, that will determine the most appropriate sludge management plan for the duration of the care and maintenance period (i.e. until the FCRP is developed and implemented).

5.3.1.3 Management of Treatment Sediments from the Grum/Vangorda Water Treatment Plant
The treatment sediment ("sludge") from the water treatment plant accumulates in the settlement pond and is periodically removed as practical to maintain storage capacity. An estimated 100 tonnes of sludge is generated each year. On one occasion during mine operations, sludge was removed to the Faro Main Pit and in 2001, prior to reactivation of the WTP, sludge dating from operation of the WTP during mining operation was removed to the Vangorda Pit. A study is proposed for 2003, as described in this volume under Proposed Studies, that will determine the most appropriate sludge management plan for the duration of the care and maintenance period (i.e. until the FCRP is developed and implemented). The available storage capacity in the settlement pond is adequate to contain sediment produced in the interim period while the 2003 study is undertaken.

2. Replace the word "demonstrable" with "significant" in the discussion on impacts on N. Fork Rose Creek

The following wording is suggested for Volume I of the EAR:

5.2.2.1 Seepage to the North Fork of Rose Creek (last paragraph)
The surface and subsurface flows are monitored as part of the site water monitoring protocol, and have not been identified as having an increasing impact on surface water in the North Fork of Rose

Creek. No routine care and maintenance activities are proposed beyond continued water quality monitoring. The Adaptive Management Plan described in Section 7 of this volume includes provision for monitoring and responding to degraded seepage quality to the North Fork of Rose Creek.

3. Provide clarification on the objectives for the proposed maintenance activities for the Intermediate and Cross Valley Dams

The following wording is suggested for Volume I of the EAR:

5.2.4.3 Intermediate and Cross Valley Dams (third paragraph)
1. *investigation and repair, if appropriate, of surficial cracks;*
2. *upgrading and/or replacement of rip rap and other erosion protection measures;*
3. *repairs to surficial erosion rills on the downstream slopes; and*
4. *maintenance of the crest, spillways or other features to the initial design operating configurations where erosion or mining activities have altered those structures.*

4. Provide clarification on the different criteria for Vangorda and Faro Pits on page 5-16

Both the Faro Main Pit and the Vangorda Pit are operated to maintain the pit water levels below a maximum desired elevation. The maximum desired water elevations for the two pits were determined using a variation of the same approach to ensure that adequate emergency storage capacity is available to contain an unanticipated inflow of water. In both pits, the pit water is non-compliant and cannot be discharged directly to the environment.

The maximum desired water elevation for the Faro Main Pit was initially calculated in 1991 and presented in a report by Kilborn Engineering that described two options for managing recycle water from the pit (the mine was operating at that time). The maximum desired water elevation was calculated as providing containment of the equivalent of a probable maximum flood event of 1-week duration with a complete breach and inflow of the Faro Creek Diversion.

The maximum desired water elevation for the Vangorda Pit was initially calculated in 1996 and presented in the Integrated Comprehensive Abandonment Plan as part of the description of possible closure methods for the pit. The maximum desired water elevation was calculated as providing containment of the equivalent of 50% of a probable maximum flood event of 1-week duration with a complete breach and inflow of the Vangorda Creek Diversion.

The reasons for the differences between the two determinations (complete breach of 1-week duration flood versus 50% of same) are due to consideration of location-specific needs, circumstances and risks. For example, the northeast pit wall of the Faro Main Pit is known to be undergoing an active retrogression of the crest towards the Faro Creek Diversion channel. This represents a heightened risk of failure of the Faro Creek Diversion into the Faro Main Pit as compared to the north wall of the Vangorda pit (underlying the Vangorda Creek Diversion Flume), which is more stable. Therefore, increased emergency storage capacity is provided for in the Faro Main Pit.

Another example of location-specific circumstances is that road access to the Vangorda Creek Diversion Flume is excellent and allows for immediate access by heavy equipment for emergency repairs to the flume or pit wall. Road access to the Faro Creek Diversion channel is, however, poorer and would require longer to access with heavy equipment for emergency repairs to the channel or pit wall. Therefore, increased emergency storage capacity is provided for in the Faro Main Pit.

5. Provide clarification on linkages between the management objective of minimizing clean water entering the site and specific project activities

The following wording is suggested for Volume I of the EAR:

5.1 Overview of the Care and Maintenance Plan (paragraph 5)
The specific objectives of the Care and Maintenance Plan are as follows:
1. *to maintain the existing systems for minimizing the quantity of clean water that enters or crosses the mine site and subsequently requires treatment;*
2. *...*

6. Provide an expanded discussion on the options for the oxide fines piles and clarification on the objectives of doing this work

The following wording is suggested for Volume I of the EAR:

6.3.2 Oxidized Fines near the Crusher Stockpile (new last paragraph)
and
6.3.3 Oxidized Fines in the Vangorda Rock Dump (new last paragraph)
Nonetheless, other options for interim reclamation of these piles may be brought forward prior to the work being undertaken and any other such options will be considered for implementation. In addition to providing short term mitigation of effects, another key consideration for selection of the preferred interim reclamation measure will be to complement, to as great a degree as possible, the work of the Closure Project Team.

7. Provide clarification on what is the fate of the leachate collected from the bioremediation cell

The following wording is suggested for Volume I of the EAR:

6.2.3.5 Design Considerations – Leachate Control (last paragraph)
Leachate collected from the sump would be collected and redistributed on top of the soils to maintain moisture conditions. Nutrients may be added to the circulated leachate to maintain an adequate nutrient balance in the soils. Distribution of the leachate will be via a network of perforated hoses or pipes. As a contingency measure against the accumulation of excess leachate, (more than required to maintain soil moisture), a holding tank would be utilized to store the excess leachate until such time that the excess leachate can be added back onto the soils or until such time as an appropriate disposal method is implemented.

8. Clarify with Environment Canada whether the proposed use of microbes in the bioremediation cell with require authorization under CEPA

The following wording is suggested for Volume I of the EAR:

6.2.3.2 The Bioremediation Process (paragraph 2)
Bacteria is naturally present in soils and consumes the organic compounds, which is usually the contaminant. This natural degradation of contaminants can be accelerated by adding fertilizer (nutrients) to the soil and controlling moisture and oxygen levels to promote microbial growth. The addition of nutrients, air, moisture stimulates microbial activity and their growth is enhanced, which increases the rate of contaminant consumption or degradation. In some cases, the soils are inoculated with special microbes that promote increased degradation rates. It is important that the bacteria or other nutrients utilized are cross referenced for compliance with the Canadian Environmental Protection Act.

9. Move the last 6 AMP events to Accidents and Malfunctions

Suggested revisions to Section 7 of the EAR (Adaptive Management Plan) and Section 8 of the EAR (Accidents and Malfunctions), which are proposed as resolving this request, are attached.

10. Provide clarification on the triggers being used in the AMP

Suggested revisions to Section 7 of the EAR (Adaptive Management Plan) and Section 8 of the EAR (Accidents and Malfunctions), which are proposed as resolving this request, are attached.

11. Provide clarification on the trigger for the AMP event for the N. Fork Rose Creek, ground or surface water

Suggested revisions to Section 7 of the EAR (Adaptive Management Plan) and Section 8 of the EAR (Accidents and Malfunctions), which are proposed as resolving this request, are attached.

12. Provide an additional component to the AMP for Rose Creek, downstream of the Cross Valley Dam

Suggested revisions to Section 7 of the EAR (Adaptive Management Plan) and Section 8 of the EAR (Accidents and Malfunctions), which are proposed as resolving this request, are attached.

13. Provide clarification on what "abeyance" means

The following wording is suggested for Volume I of the EAR:

9.2 Amendments Regarding Mine Closure (new section)
In January 2003, an announcement was made by DIAND that the development of an FCRP would be undertaken by a government project team that would be formed for this specific purpose.

Development of a new FCRP for the mine complex, as planned by the project Closure Team, is necessary to:

- *provide a comprehensive plan that integrates all aspects of the mine complex into the one cohesive plan;*
- *take advantage of advancements in mine reclamation technology that have occurred since previous closure measures were proposed; and*
- *resolve information gaps.*

The planned development of the FCRP by the closure Project Team has two primary implications for the existing water licences.

The first implication involves clauses that require the licencee to implement closure measures according to timeframes that do not correspond to the proposed timeframe for the FCRP and that may not correspond to the closure measures that are ultimately proposed in the FCRP. These clauses are proposed to be held in abeyance for the duration of the new water licence. That is, these clauses would remain in the licence but would be specifically stated as not having effect for the duration of the licence. In this way, these clauses could come into effect again at the expiry of the licence, if necessary.

The second implication involves closure related studies. Studies related to developing reclamation and closure measures are under the direct management of the closure Project Team and will be executed as appropriate to develop the FCRP. Therefore, the closure related studies that are in the current water licences are proposed to be removed.

The closure design criteria that are specified in the current water licences are not immediately affected by the activities of the closure Project Team and, therefore, no changes are proposed to these clauses.

Closing

We thank you for convening the May 13 meeting. Our intention in this letter has been to resolve the response items that were identified in the Meeting Summary Notes and trust that the information that is provided herein accomplishes this goal. We look forward to continuing to work through the review process with you.

Yours very truly,
DELOITTE & TOUCHE INC.
in its capacity as Interim Receiver of
ANVIL RANGE MINING CORP.

Shannon Glenn
Manager, Environmental Services
Enterprise Risk Services

c. Wes Treleaven, Deloitte & Touche Inc.

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Deloitte & Touche

To:	Office/Company:
Eric Soprovich	Environment Canada
Fax No:	
867-667-7962	
From:	**Date:**
Shannon Glenn	September 5, 2003
Number of Pages (including cover sheet):	**To confirm receipt, or if you do not receive all pages, please call:**
	(416) 601 6454

Comments:

Eric,

Further to your question, the freshwater supply pond near the Vangorda water treatment is highlighted in the two attached figures (from the Executive summary of the EAR – if you would like to see better copies). My understanding is that the water from this pond is used to slake the lime.

Best regards,

Shannon

Deloitte Touche Tohmatsu

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Glenn, Shannon (CA - Toronto)

From: Soprovich,Eric [PYR] [Eric.Soprovich@ec.gc.ca]
Sent: Friday, September 05, 2003 12:10 PM
To: Glenn, Shannon (CA - Toronto)
Cc: Enns,Vic [PYR]
Subject: RE: TAC meeting update regarding Grum Construction Site Clean-up

Shannon:

Thanks for the update. Is this possibly the "freshwater lake" that is being referred to in the water licence submission for use at the Vangorda water treatement plant?

Thanks.

e.

-----Original Message-----
From: Glenn, Shannon (CA - Toronto) [mailto:sglenn@deloitte.ca]
Sent: Friday, September 05, 2003 7:43 AM
To: Chort, Valerie Jeanne (CA - Toronto); orbans@pac.dfo-mpo.gc.ca; vale@pac.dfo-mpo.gc.ca; hartshorneb@inac.gc.ca; victor.enns@ec.gc.ca; eric.soprovich@ec.gc.ca; edenholm@gartnerlee.com; rrdc@yknet.yk.ca; simss@selkirkfn.com; townof@yknet.yk.ca; marg.crombie@gov.yk.ca; sherstoned@inac.gc.ca; bvandijk@yukoncollege.yk.ca; william.dunn@gov.yk.ca; rod.hill@gov.yk.ca; bill.slater@gov.yk.ca; leslie.gomm@gov.yk.ca; salmon@yknet.yk.ca; salmon@yknet.yk.ca; Robert Lauer (E-mail); Dana Haggar (E-mail); Bud McAlpine (E-mail); benoit.godin@ec.gc.ca; hcopland@gov.yk.ca; Carl Sidney (E-mail); ycs@ycs.yk.ca
Cc: Treleaven, Wesley (CA - Toronto); MacPhee, Kristine (CA - Toronto); Joanna Ankersmit (E-mail); Kathlene Suza (E-mail); Murray J. Leitch (E-mail)
Subject: TAC meeting update regarding Grum Construction Site Clean-up

Dear all,

Please find attached an update related to discussions held at the July 9 2003 TAC meeting.

If you have any questions, please give us a call.

Best regards, Shannon

<<TAC meeting update September 5 2003.pdf>>

Shannon Glenn
Senior Manager
Deloitte & Touche, Enterprise Risk Services
Risk Consulting and Regulatory Services/Environmental Services
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Toronto, ON, Canada, M5K 1B9
Telephone: 416-601-6454
Fax/Télécopieur: 416-601-5902
E-mail: <sglenn@deloitte.ca>
Web: Deloitte & Touche Environment Health and Safety Services
<http://www.deloitte.com/dtt/section_node/0,2332,sid%253D8180,00.html>

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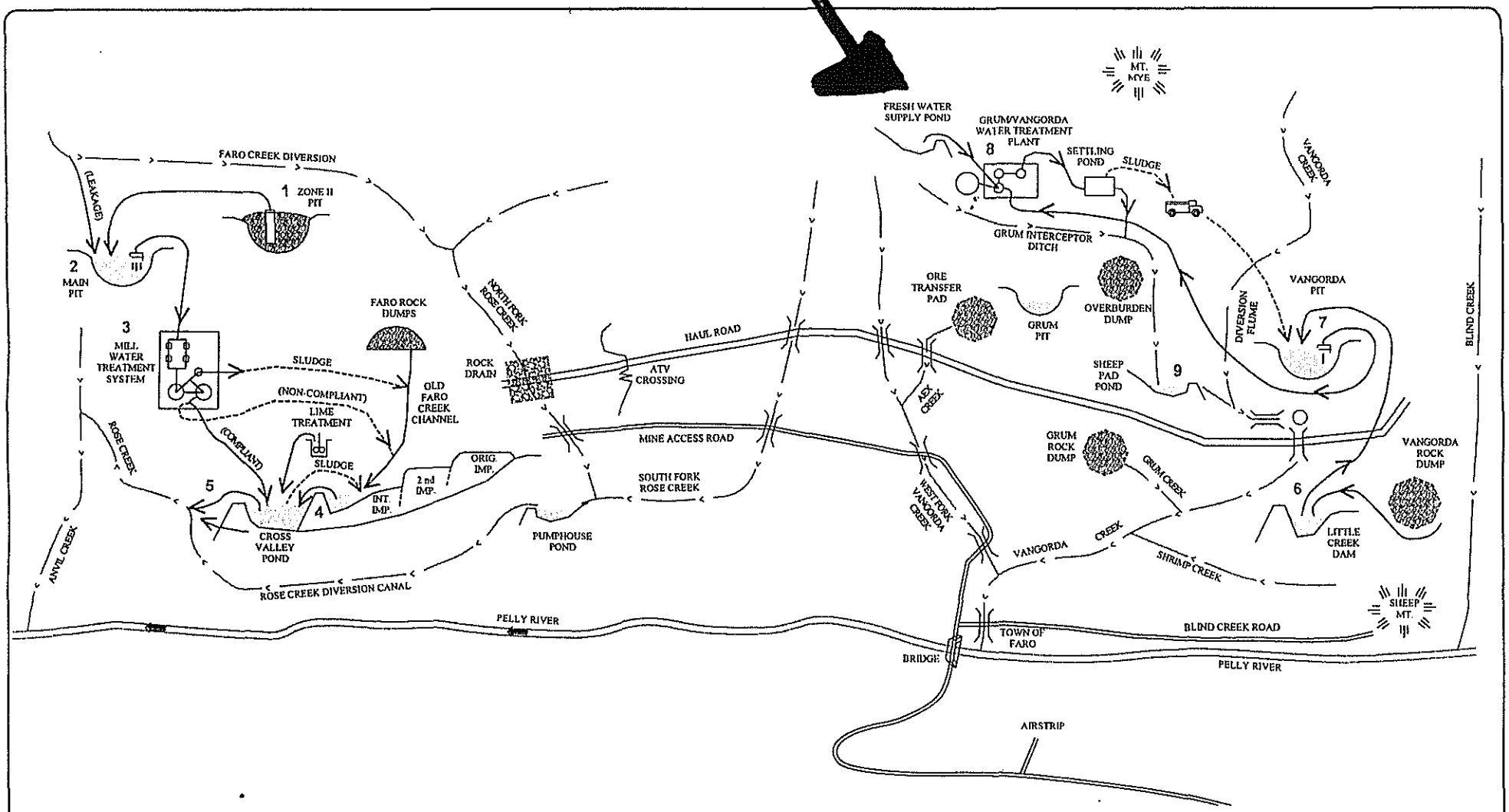


PROPOSED ACTIVITIES:

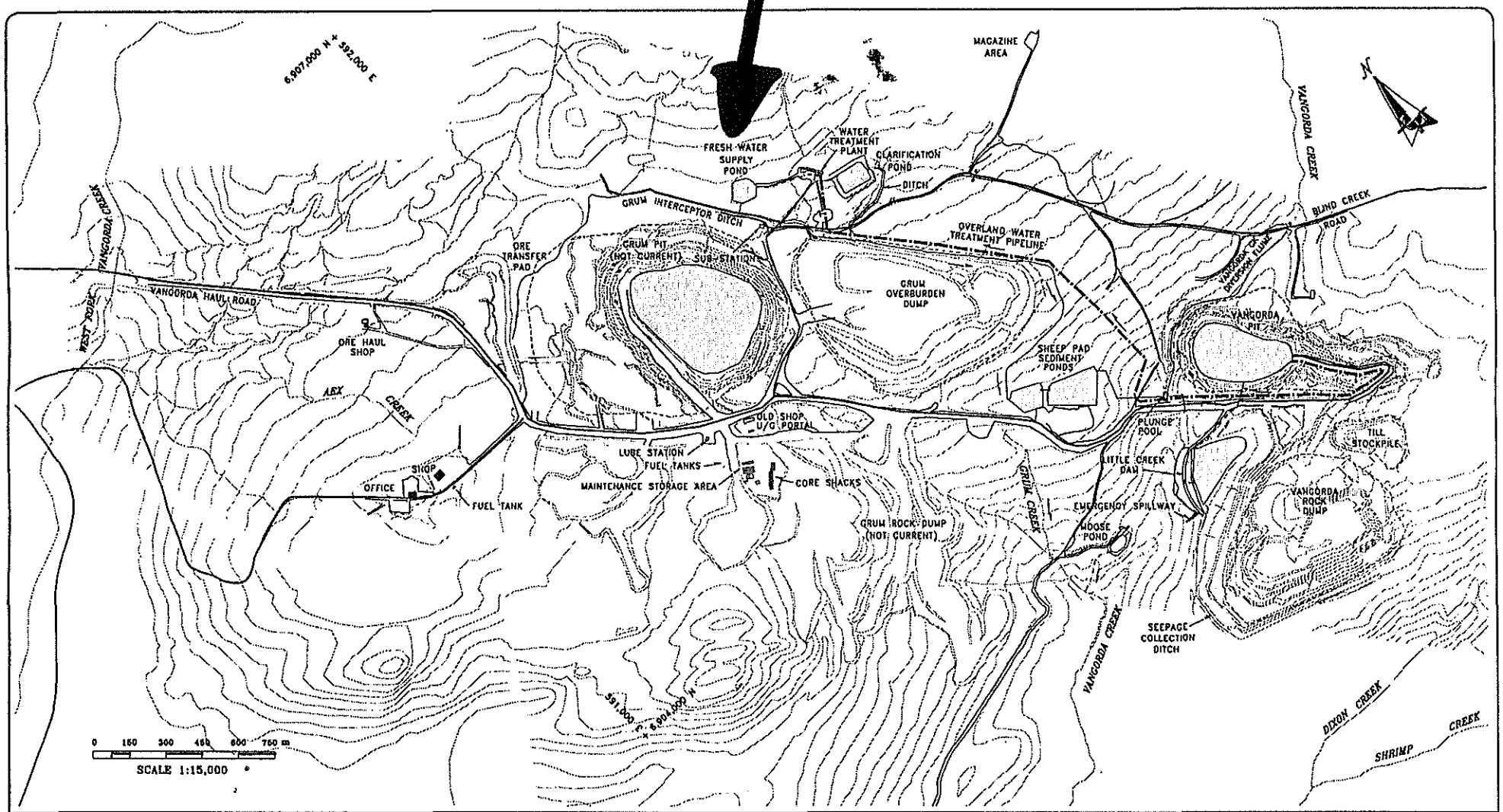
1 PUMP ZONE II PIT
2 PUMP MAIN PIT
3 MILL WATER TREATMENT SYSTEM
4 INTERMEDIATE POND LIME TREATMENT
5 DISCHARGE WATER TO ROSE CREEK
6 PUMP LITTLE CREEK DAM
7 PUMP VANGORDA PIT
8 GRUM/VANGORDA WATER TREATMENT PLANT
9 DISCHARGE WATER TO VANGORDA CREEK

DRAWING INFORMATION:	
REVIEWED BY:	LH/ED
DRAWN BY:	CPW
DATE ISSUED:	APRIL, 2003
PROJECT NUMBER:	22-307
FILE NAME:	22307-08-ES-03.DWG
REVISION:	0

ANVIL RANGE MINING CORPORATION
(INTERIM RECEIVER)
2004 TO 2008 WATER LICENCE RENEWAL
ENVIRONMENTAL ASSESSMENT REPORT

SUMMARY OF PROPOSED CARE AND MAINTENANCE ACTIVITIES
FARO AND VANGORDA PLATEAU SITES

Gartner Lee | Deloitte & Touche | EXECUTIVE SUMMARY FIGURE NO. 4



LEGEND:

- ROADS
- EXISTING SURFACE DRAINAGE
- PRE-MINE DRAINAGE
- EFFLUENT PIPELINE
- PIPELINE
- WATER TREATMENT PIPELINE
- SURFACE WATER

SOURCES OF INFORMATION:

1. DIGITAL COPY OF 1:50,000 TOPOGRAPHIC MAP SUPPLIED BY SRK CONSULTING.
2. FARO MINE DETAILS ADAPTED FROM DRAWINGS BY ROBERTSON GEOCONSULTANTS INC.

DRAWING INFORMATION:	
REVIEWED BY:	LH/ED
DRAWN BY:	CPW
DATE ISSUED:	APRIL 2003
PROJECT NUMBER:	22-307
FILE NAME:	22307-D6-ES-02.DWG
REVISION:	0

ANVIL RANGE MINING CORPORATION
(INTERIM RECEIVER)
2004 TO 2008 WATER LICENCE RENEWAL
ENVIRONMENTAL ASSESSMENT REPORT

VANGORDA PLATEAU MINE SITE OVERVIEW

Gartner Lee | Deloitte & Touche

EXECUTIVE SUMMARY FIGURE NO. 3

Deloitte & Touche

Anvil Range Mining Corporation
(Interim Receivership)
Open Houses

Environmental Assessment Relating to Renewal of Water Licence

Deloitte & Touche Inc., as Interim Receiver of Anvil Range Mining Corporation, will be applying for a renewal of site licences expiring December 31, 2003. The process began with the submission a Project Description to DIAND Environment Directorate to initiate an environmental assessment of proposed activities under the Canadian Environmental Assessment Act (CEAA). This Project Description describes the intent of the proposed next licence term of 5 years, during which activities will include continued care and maintenance, as well as studies leading to the development of and permitting a Final Closure and Reclamation Plan. This meeting is planned for Deloitte & Touche Inc. to solicit input in the preparation of an Environmental Assessment Report related to proposed activities. Public meetings will also be held in Whitehorse on August 21, and in Ross River on October 10.

DATE	**Friday, August 23, 2002**
TIME	**5:00pm - 7:00pm**
LOCATION	**Faro, Sportsmen Lounge, Rec Centre Complex, 2nd floor**

Environmental Assessment Relating to Maintenance-related Modification of the Fresh Water Supply Dam

Additionally, as a separate item, Deloitte & Touche Inc. intends to lower the spillway of the Fresh Water Supply Dam on the Anvil Range property in the late fall of 2002. This work is planned as a first step to mitigate risk identified with deterioration of the low-level pipe which runs underneath the structure. A separate CEAA review is under way for this specific work. Anyone interested in finding out more about this project is invited to an open information session.

DATE	**Thursday, August 22, 2002**
TIME	**5:00pm - 7:00pm**
LOCATION	**Faro, ARMC Guesthouse downstairs**

ANVIL RANGE MINING CORPORATION
WATER LICENCE RENEWAL

PUBLIC OPEN HOUSE:
August 21, 2002

ATTENDANCE LIST

NAME (please print)	EMAIL ADDRESS	HOME ADDRESS	Check (✓) if you would like to comment on upcoming reports
Chuck Tobin		1012 Pine St.	
Jesse Luke	Jesse.LukeQgov.YK.ca		
Greg Siska		408 Ogilvie St.	
MAURICE HERLE		23 TABOR	
Rod Lusk	rodcarid@hotmail.com	2 Sage Whse	✓
Pat White		Provost, AB.	
Fred Blanchard	36, HANNA Mobility	36, HANNA	
W G Johnson		Box 100 Teslin	
RANDY BRAGG		408 HANSON W.Y.	
Kelly Tweedie		313 Pioneer Dr.	
Brad Bill	36 HANNA		
Gordon Bill		11 McCandless Crescent	
DON Roberts		23 Boswell	
CORD HAMILTON		12 MacQUESTEN Road	
JACK BENNETT	jbennett@eba.ca	77 Klucne Cres.	
Mike Power	amerok@yknet.yk.ca	Box 31097 Whitehorse Y1A 5L6	
Mike Phillips	mphill.ps@klondike.com	50 Alsek Rd Whitehorse, YT	Y1A 3K4 ✓
DAVID SHORSTONE	shorstond@inac.gc.ca		

(2) of (2)

ANVIL RANGE MINING CORPORATION
WATER LICENCE RENEWAL

PUBLIC OPEN HOUSE:
August 21, 2002

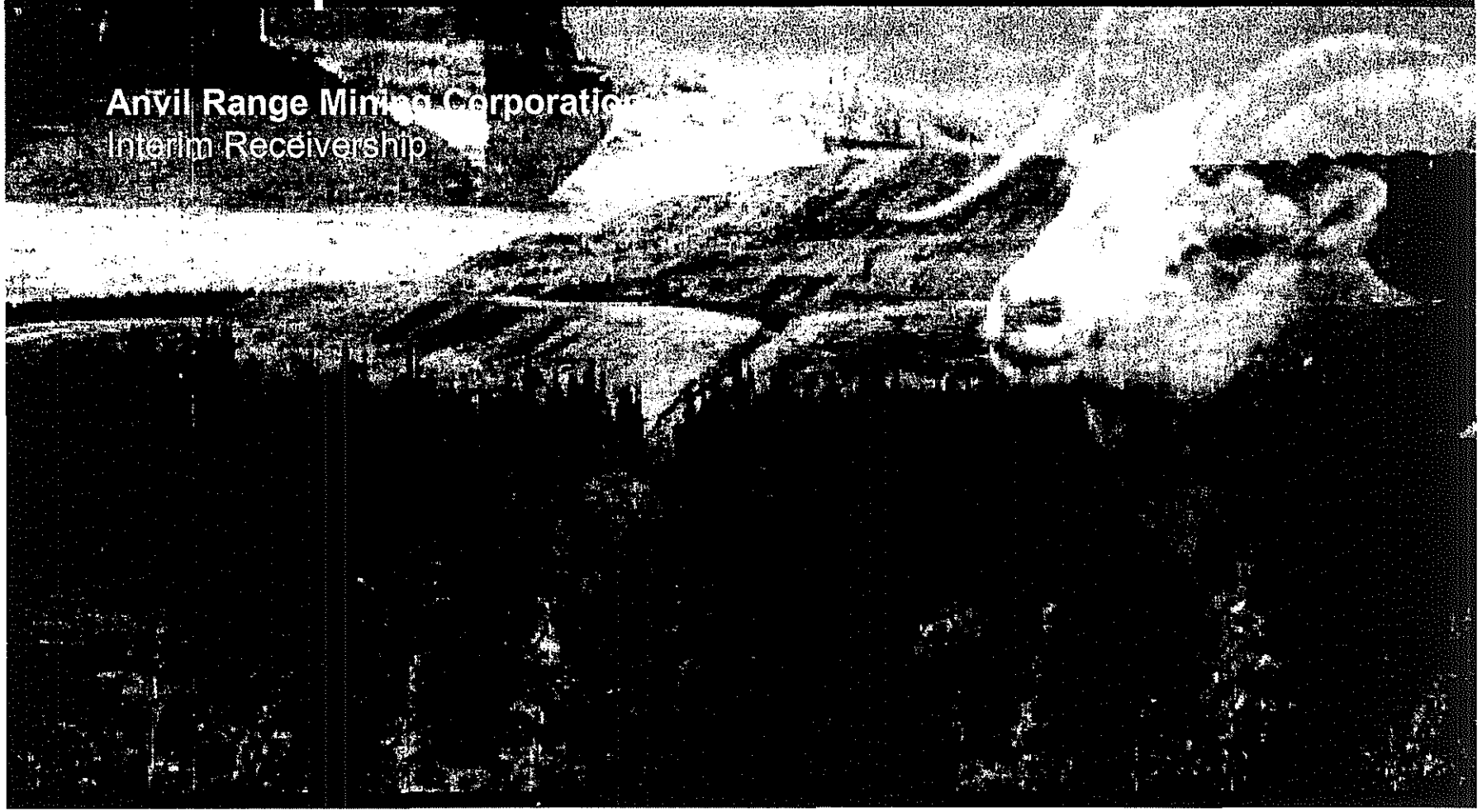
ATTENDANCE LIST

NAME (please print)	EMAIL ADDRESS	HOME ADDRESS	Check (✓) if you would like to comment on upcoming reports
BRUCE CAMPBELL	WHITEHORSE	YT Box 31036	Ph 393-3191
RANDY LEWIS	RLEWIS@ARCTICALPINESEED.Com		✓
	Box 1220	MARSH LAKE, YOB1Y1	
GERT HADWICK	7180-7th ave	whitehorse YT	
PAULA HARKER	harkerp@inac.gc.ca		
[illegible] McLaughlin	jmclachlan@yknet.yk.ca	Box 189 FARO YT	✓
KEN BERG		26 BALSAM CR. WH.	✓

Deloitte & Touche

RERC update re. Water License Renewal EAR

Anvil Range Mining Corporation
Interim Receivership



Deloitte & Touche

HISTORY OF WATER LICENCE RENEWAL EA

- Project Description May 2002
- Project Description Supplement Fall 2002
- DIAND announcement- Project Team, January 2003
- Final Guidelines - March 11, 2003
- Submission of EAR- April 29 2003

Deloitte & Touche

JANUARY 20TH ANNOUNCEMENT

- Announcement made at January 20th TAC meeting held by the Interim Receiver
  - Property not economical
  - Closure planning responsibilities of government, involving three levels of government
- Type II Mines Closure Office has been formed

Deloitte & Touche

ANVIL RANGE: BUSINESS UPDATE

Disbursement to creditors

- Court challenge by group of unsecured creditors to Plan of Arrangement not being heard by Supreme Court
- Monies disbursed to secured creditors last week

Mill assets

- Property not-economical
- Mill assets released; proceeds to go to the government

Security

- Interim Receiver was authorized to transfer the funds in the TEF into the RSTF
- But tax considerations need clarification with CCRA before this is done

Deloitte & Touche

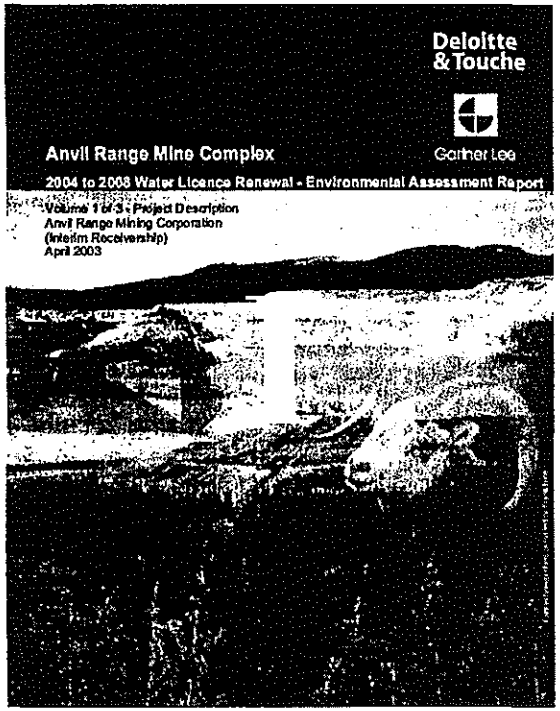
SCOPE OF EAR

- Scope in March 11 2003 Guidelines:

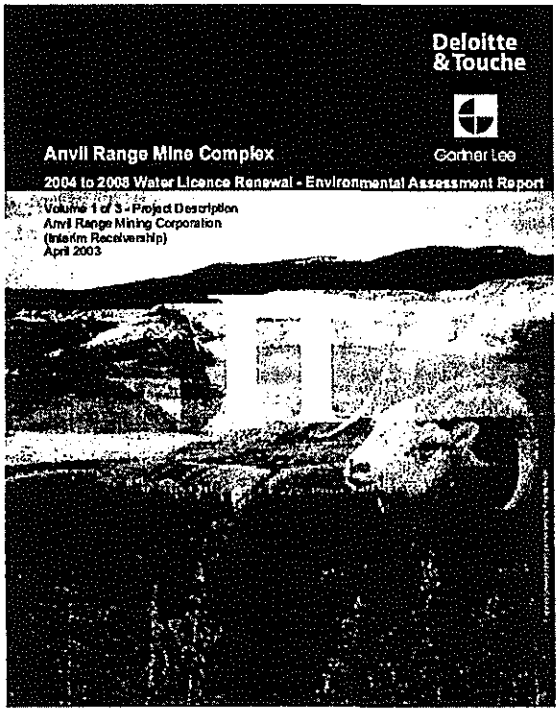
"The scope of the project for this assessment includes the physical works and undertakings in relation to the care and maintenance and related activities of the Anvil Range Mining Complex during the period of the proposed five year water licence. This must include the principal undertaking and any accessory activities or physical works that are directly linked to, or interconnected with, the principal project. In this case, the physical work is the actual mine site and the principal undertaking in relation to that physical work is the care and maintenance, new activities/undertakings, adaptive management program, ongoing studies and other accessory activities."

Deloitte & Touche

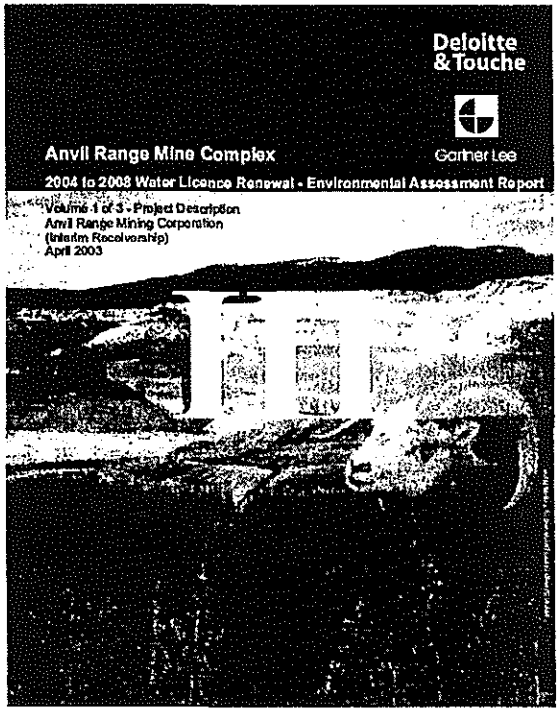
THREE VOLUMES OF EAR



Project Description



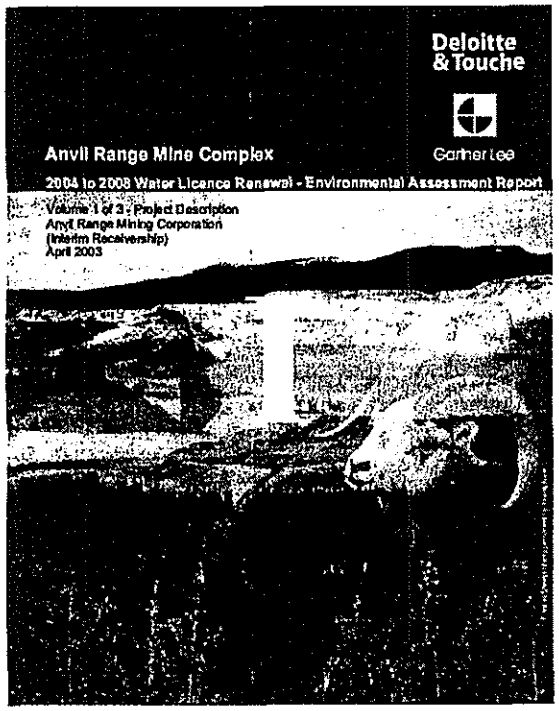
Description of Existing Environment



Enviromental Assessment

Deloitte & Touche

PROJECT DESCRIPTION

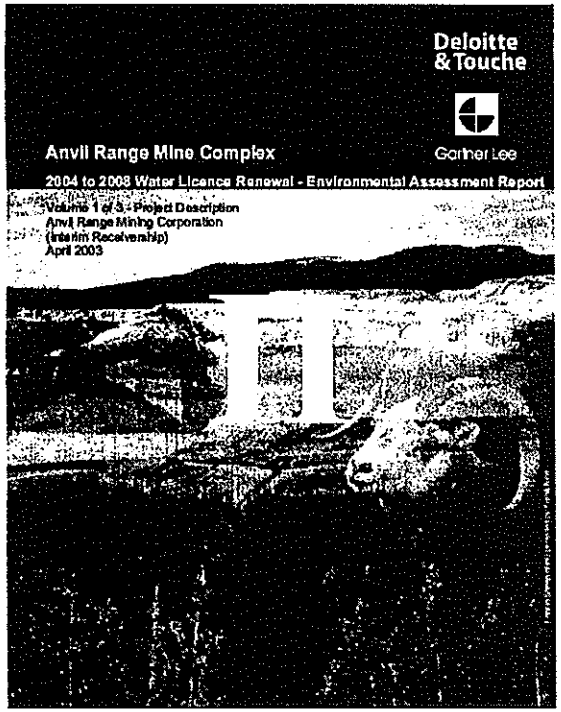


Project Description

- Objective: Maintain property to meet existing water licence requirement, limit increase in long-term liability and not constrain closure planning
- Timelines: chosen to allow time for closure planning team to develop a FCRP
- Content of Project Description:
  - Description of facilities and regulatory history
  - Expanded description of water management
  - Proposed new activities
    - Building demolition
    - Hydro-carbon contamination
    - Maintenance of Acid Generating Materials
  - Adaptive Management Plan
  - Care and Maintenance Studies

Deloitte & Touche

DESCRIPTION OF EXISTING ENVIRONMENT

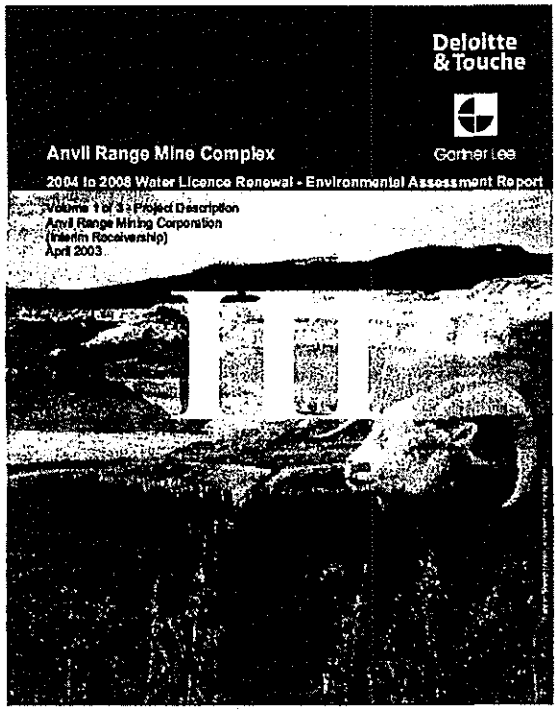


Description of Existing Environment

- Included information per guidelines and to support EA framework
  - Focus on 1998-2002 **plus** new information not included in Volume II of Original Project Description (ie. more fish, vegetation, enhanced traditional knowledge and water quality data)
- Volume II of Original Project Description is still available to assist in review of EAR

Deloitte & Touche

ENVIRONMENTAL ASSESSMENT

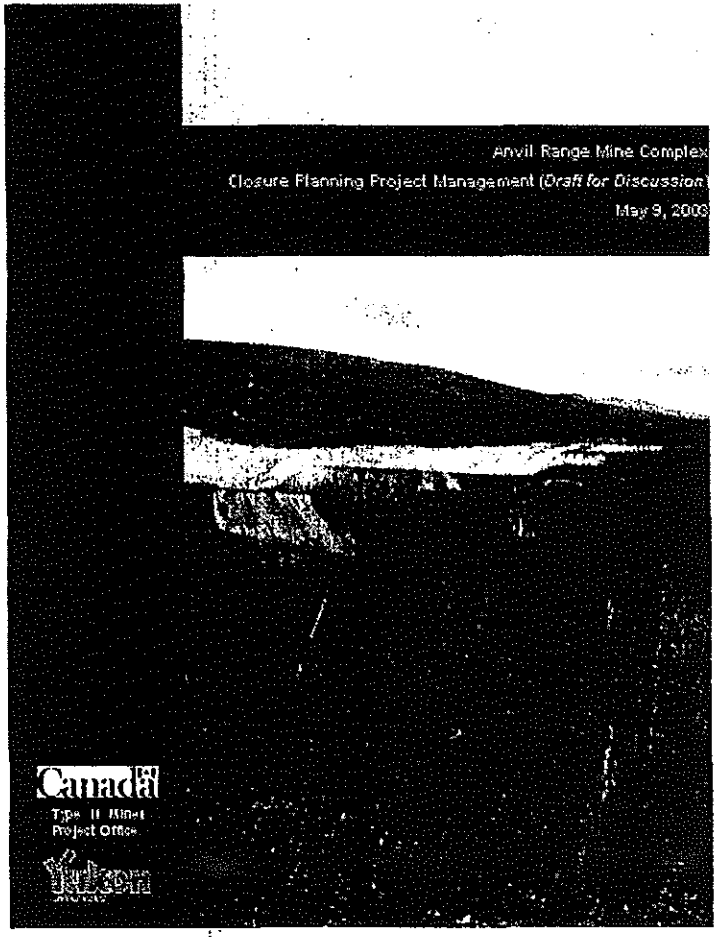


Enviromental Assessment

- Followed standard CEAA practices
- 1998-2002 baseline:
  - Environmental impact assessment of proposed activities based on evaluation of change in relation to 1998-2002.
- Impact assessment based on individual project **activities** and linkages between these activities and VECCs.
- Included enhanced traditional knowledge

Deloitte & Touche

LINKAGE TO CLOSURE PLANNING



- Companion document to EAR submitted by Type II Mines Office
  - Need for closure planning
  - Closure Planning Project Management
  - Identified information gaps
- Proposed 2004-2008 timelines chosen to allow for development and permitting of FCRP
- In licence application, request to 'set aside' closure activities in existing licence

Deloitte & Touche

Water Licence Renewal RERC Meeting

Anvil Range Mining Corporation
Interim Receivership

Deloitte & Touche

Project Team

Interim Receivership

- Receivership: Wes Treleaven, Partner
- Long Term Closure Planning: Valerie Chort, National Leader Environment Health and Safety Services
- Water Licence Renewal: Shannon Glenn, Manager, EHS Services

Environmental Assessment

- Stephen Morison, EA Project Manager, Gartner Lee Limited
- Glenda Fratton, EA Coordinator, Gartner Lee Limited

Deloitte & Touche

Context

Economic

- Mine will not re-open: independent economic studies

Permit

- Existing water licences expires December 31, 2003

Information on Property

- Changed circumstances
- Knowledge gaps

Devolution

- April 2003
- Transfer Agreement:
  - Will require time for YTG/DIAND to negotiate specifics of responsibilities
- Uncertainty around environmental assessment after Devolution
  - New CEAA: coming into effect; timing unknown
  - DAP

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Approach

One 5 year Licence

- Pragmatic and cost effective
- Sets template for long term closure and monitoring of the site

Objective of Licence Term

- January 2004-Dec 2008 allows time to:
  - Care and Maintenance/Continuing Reclamation
  - Charaterization and closure alternative studies and consultation leading to Final Closure and Reclamation Plan (FCRP)
  - Permitting of FCRP

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Timelines 2004-2008

Activities

Studies and Continuing Care & Maintenance Discussions with Stakeholders → FCRP YEAA/DAP → WB Application

Deliverables

2004 — 2006 — 2008

- FCRP Project Description
- YEAA/DAP EAR
- WB Application

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Care and Maintenance/Continuing Reclamation

Water/ Diversions/ Dams

- Seasonal pumping of Faro Main, Zone II and Vangorda pits
- Monitoring Grum pit
- Water treatment at the mill and Vangorda treatment plant
- Faro and Vangorda diversions: upgrading and possible re-location

Security/ Monitoring/ Contingency

- Roads, control access to property
- Emergency Preparedness

Continuing Reclamation

- Sulphide cells and high ARD sources
- Buildings and scrap
- Former fuel storage

Deloitte & Touche

Final Closure and Reclamation Plan

Characterization

- Plan development with ongoing consultation
  - Dump ARD and Water Balances
  - Water Quality Predictions
  - Follow-up Tailings Study

Closure Alternatives

- Diversion Methods
- Cover Tests
- Water Treatment Methods

Permitting

- Assessment and Regulatory process estimated to take 2 to 3 years
  - Environmental Assessment
  - Securing funding
  - Water Board Application

Deloitte & Touche

Management Structure

Mandate

- Stability for on-going care and maintenance
  - 'preserve, maintain, protect'
  - Court process provides transparency
  - "Deloitte & Touche as Interim Receiver of ARMC" named on licence
  - DIAND is funder of activities – requirement for sustainable long-term funding

Continuity

- Restructuring TAC: involvement in development of FCRP

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Memo

Deloitte & Touche

Date: November 4, 2002

To: Ken Pearl, Valerie Chort, Shannon Glenn, Doug Sedgwick

cc: Greg Stevens

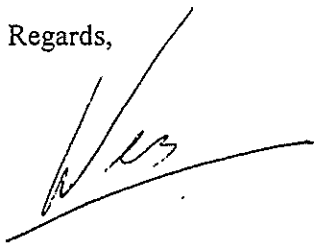
From: Wes Treleaven

Subject: Anvil Range Mining Corporation

Attached for your information are several articles that have appeared in the recent press in Whitehorse. The Auditor General's report on Contaminated Sites in the North has received quite a bit of coverage. I wish to draw to your attention to the October 23rd CBC special report interviewing Ian McGreggor, the Director of Ottawa DIAND. He continues to maintain that Deloitte & Touche is arms length to the department in all respects.

I'll continue to monitor all reports and any of interest I'll pass along.

Regards,



NORTHERN ABANDONED MINESITES

WHITEHORSE: (Hendry) Yukon Conservation Society is backing a stern report from the federal environment commissioner that says Ottawa needs to take urgent action on abandoned minesites. Christine Cleghorn is the society's executive director. She says the report which was released this week shows mismanagement has left DIAND holding the bag for mounting cleanup costs of bankrupt mines across the north. (Cleghorn) "It talks in the report about that this problem is going to get worse before it gets better because many of those sites were engineered with the idea that permafrost would have integrity over time so as the north is affected by climate change and we see permafrost degradation and slumping that's going to have implications for the integrity of some of the engineered structures at these sites." Out of the $26 million dollars DIAND spends per year on mine reclamation, 90% of that goes

to only four northern mines, two in the NWT, as well as Faro and Mount Nansen in the Yukon. Cleghorn says she's pleased to see some recognition within DIAND the department has problems with staffing levels and resources and that the department is now requiring 100% financial security for mining companies who want to set up new sites in the north.

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OCTOBER 24, 2002
12:00 P.M.
CBC WHITEHORSE NEWS TRANSCRIPTION

NORTHERN ABANDONED MINESITES

WHITEHORSE: (Peter Novak) Independent MLAs want to know why the Yukon and federal governments are closing the door on private sector plans to clean up abandoned mines in the Yukon. A Yukon based company says it has commitments of up to $40 million dollars for mine cleanup work but governments are refusing to deal. (Brian Boyle) Independent candidate Roger Rondeau wants to know why Yukoners aren't being hired to clean up abandoned mines in the territory. (Rondeau) "When will the government step up to the plate and become a player to create proper job opportunities for Yukoners?" Rondeau says governments are spending millions of dollars just on maintenance on mines like Faro and Mount Nansen but most of the work is going to outside companies. Mel Frederickson heads a reclamation company. He thinks he has an answer to that problem. Frederickson says multi-national companies are willing to put up millions of dollars so they can advertise that they helped clean up the Yukon. (Frederickson) "People like British Petroleum and Exxon Mobile and Phillips, Conneco. If they can get the proper recognition and the proper advertising, they're ready to put their money in because what better place could they support. It'll be deductable tax writeoff money." Frederickson doesn't understand why governments are turning down an opportunity to save millions of dollars in cleanup costs. (Frederickson) "We think that we can come up with $40 million dollars within the next 30 to 60 days." Frederickson says the federal government has flatly refused to take part in the deal. Now

he's counting on the Yukon government to get involved.

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REGIONAL INFORMATION OFFICE
OCTOBER 24, 2002
12:30 P.M.
CHON-FM WHITEHORSE NEWS TRANSCRIPTION

NORTHERN ABANDONED MINESITES

WHITEHORSE: (Jen Kelland) A Yukoner who represents a non-profit environmental cleanup fund says he'll have $40 million dollars in a Whitehorse bank by the end of November, money that he says could go toward reclamation work at the Faro minesite. Mel Frederickson represents the Resource Reclamation Fund which is a fund paid into by companies such as BP, Exxon and Conneco and intended for environmental projects. Frederickson says he'll have as much as $200 million dollars within 6 months. He says the only catch is the federal government has to agree to match whatever RRF puts towards a project such as the Faro mine reclamation, something Frederickson says DIAND minister Robert Nault has flat out refused to do. Frederickson says the feds are wasting time with studies and administrative costs when Yukoners could be put to work cleaning up the mine. (Frederickson) "The thing is it's not a space age problem. It's heavy metals. It's oxidized zinc. Zinc oxide is its main problem and it's not a highly technical situation.

It's what you call a cash cow." Independent candidate Mike McLarnon says the Yukon Liberals have been slow to back home grown solutions for the Faro mine such as Frederickson's. McLarnon says instead the government has remained silent while the feds give the contract work to companies from outside the territory, something McLarnon says won't change even after devolution comes into effect next spring. (McLarnon) "In fact we've been assured by the department officials that it can't change after devolution because then abandoned minesites are fully excluded from this and the federal government does maintain control over all of them so again it's not bad if you're considering that they've got to spend the money on it but it's not good if you think that they're going to put Yukoners to work." As it stands right now, the Toronto firm appointed as a receiver for the Faro mine is applying for a license from the Water Board. McLarnon fears this will give the firm a mine manager's position by default.

OCTOBER 22, 2002
12:00 P.M.
CBC WHITEHORSE NEWS TRANSCRIPTION

ABANDONED MINESITES

WHITEHORSE: (Peter Novak) Canada's auditor general is coming down hard on the federal government's handling of abandoned mines in the north. A report from the commissioner of the environment and sustainable development says Ottawa is wasting money, stalling on cleanup plans. (Brian Boyle) Faro and the BYG Mine at Mount Nansen near Carmacks are being showcased as two worse case examples. Ottawa is spending $1.5 million dollars a year at Mount Nansen on a bandaid solution according to the report but the site could be cleaned up permanently for just over $6 million dollars. The auditor's report says delaying a final cleanup is simply running up the final bill for Canadian taxpayers. The report says the federal government promised to come up with plans and detailed regulations to deal with those mines 8 years ago and still hasn't followed through. Now the report before parliament is calling for clear specific action plans complete with deadlines for a final cleanup. The auditor's study says cleaning up abandoned mines in the north is expected to cost $555 million dollars in total but it says delaying that work will only cost taxpayers more.

OCTOBER 23, 2002
6:45 A.M.
CBC WHITEHORSE SPECIAL REPORT

WHITEHORSE: (Jo Mrozewski) Federal officials had their hands slapped yesterday by the auditor general. A new report on abandoned mines in the north singled out both Faro and the BYG mine at Mount Nansen as particularly bad cases of abandoned mines not being handled properly. The report gives direction to the federal Dept. of Indian and Northern Affairs to deal with the problem. We have reached the department's director general Ian McGregor in Ottawa to get some reaction.

Mrozewski: "What message do you take from reading the commissioner's report?"

McGregor: "Well, we're actually very pleased with the commissioner's report. We have been concerned with the management of minesites in the north for some time and are quite happy with the recommendations."

Mrozewski: "So quite happy even though the report uses language like a band-aid approach, not optimal use of public funds, delaying decisive action. Those seem to be quite strong words for a bureaucratic report."

McGregor: "They are fairly strong words. We have made no secret of the fact that we have been doing our best and we have been successful at maintaining the environmental protection but we have not had adequate funds to clean up these sites so in that sense when the auditor general says it's just a

band-aid I think that's not an unreasonable assessment."

Mrozewski: "The comment thought that is made by the report is that the accumulated cost really is in the ballpark of just a final cleanup. Why not just put money into a final cleanup?"

McGregor: "No. Actually the accumulated cost doesn't quite match the total cleanup. It's really a question, to put it in perspective, between buying a house with cash or buying a house over time. We haven't had enough money to pay cash. We're of course working closely with the Yukon government as we move forward to devolution."

Mrozewski: "And I'd like to talk to you about devolution. I just though would like to ask one more question with regard to ongoing costs. The report notes that you spent $26 million a year to prevent water contamination, to protect human health and the environment. I'm assuming that this is the ongoing cost that the commissioner refers to. Now, in a case of say Mount Nansen, what's to prevent taking some of that $26 million to try to at least deal with one or two at a time in a final way?"

McGregor: "Well, the Mount Nansen costs - the $26 million are the costs right across the north and if you stop doing care and maintenance at some sites to clean up Mount Nansen we potentially have a disaster at other sites and we're certainly not prepared to do that. We're trying to maintain environmental protection right across the north."

Mrozewski: "Some Yukon politicians have been asking for the auditor general to take a yet closer look at the Faro mine and at the ongoing maintenance at the Faro mine and the contract that has been awarded is more than it needs to be. I'm wondering whether this report is going to have any effect on the Faro situation or whether you're going to wait for more word from the auditor general on that?"

McGregor: "Well, this report certainly isn't going to have an impact on the Faro situation in the short term but I'd like to be very clear. The receiver on site which is Deloitte Touche, has been appointed by the courts. They are responsible for maintaining the site in environmental compliance and

as a result of that court order, the Dept. of Indian and Northern Affairs pays the bills but we do not have a contract with Deloitte and Touche."

Mrozewski: "So even though the court has ordered it, I'm sure that the court listens to submissions from all of the various parties as to an amenable direction to go. Have you had any bearing in Deloitte and Touche being chosen to have responsibility for the site?"

McGregor: "No. We did not ask for Deloitte and Touche to be appointed, though that doesn't mean in any way that we're unhappy with their performance. It was a court decision."

Mrozewski: "Now you mentioned that devolution is a factor in situations, specifically in the Yukon. How so in your view?"

McGregor: "Under the Devolution Transfer Agreement there are 7 relatively large sites that have special provisions in terms of the management and funding for those sites starting April 1st and the two sites that the auditor general has looked at, Faro and Mount Nansen, are on that list so we're working very closely with the Yukon government to make sure we have a smooth transition on the management of these sites in the next year."

Mrozewski: "So are you saying as of next year then your department will have nothing to do with those sites whatsoever?"

McGregor: "I wish that were the case but no, under the agreement we will certainly be paying the bills and there is a specific process put in place for the management of these sites and in the case of Faro, because of the complex nature of that site, we may actually be

looking at joint management of some sort into next year."

Mrozewski: "To what extent have the kinds of concerns raised by the auditor general been reflected in the agreements that you have struck in devolving these responsibilities to some extent?"

McGregor: "The auditor general notes in the report they are quite satisfied with the steps we have been taking in recent years to put in place a sound management structure and approach for these sites."

Mrozewski: "One of the things in talking to some of your colleagues over the years that strikes me is that, especially in light of the comments from the auditor general, is that your office is taking steps to deal with the problem and what seems to be a road block is at the Treasury Board level or trying to get cabinet to cough up the money to deal with this problem in a bigger sense. Is that ever going to be resolved? Are you ever going to get more money from the political people?"

McGregor: "Well, I certainly hope so. I think this issue is taken very seriously by political people and we're hopeful that we will receive adequate resources to address the issue."

Mrozewski: "And perhaps might see that money flow?"

McGregor: "Well, for one thing the government in its recent speech from the throne stated very clearly its intent to accelerate remediation of sites. -(interview cut off and CBC went to a political announcement).

OCTOBER 22, 2002
5:15 P.M.
CBC WHITEHORSE SPECIAL REPORT

WHITEHORSE: (Dave White) Yukoners have been complaining for years about the mess left behind by mining companies. Now an arm of the auditor general's department has taken a look at abandoned mines in the north. Joanne Gilleneau(?) is the commissioner of the environment and sustainable development in the auditor general's department.

White: "Why did you office decide to look into this issue, the issue of abandoned mines in the north?"

Gilleneau: "In fact, we were looking at contaminated sites and as we have started the audit we find out that abandoned mines were part of the contaminated sites in this country that need to be addressed, mainly because we are talking about very highly toxic sites and we were wondering what the federal government was doing with respect to those sites and then we came back with a full audit and the conclusion that we reported on this afternoon."

White: "Which mines did you look at specifically?"

Gilleneau: "Essentially in the Yukon we looked at Faro mine and Mount Nansen mine but I have to tell you that those two mines were used more to illustrate the purpose of this issue than doing an in-depth audit of those mines which we didn't do."

White: "So you couldn't look at them all so you took a couple that were representative?"

Gilleneau: "Exactly."

White: "What kind of environmental problems could these mines pose?"

Gilleneau: "First of all, we're talking here about mine residues that are highly toxic of course. We're looking at arsenic, cyanide and there's some risks that Canadians can face through those contaminants, health risks and environmental risks and especially in those two cases we were aware that the structures that contained the waste and the contaminated water present a risk to flow out of the site so that was a major concern for us and what we are saying is that so far the Dept. of Northern and Indian Affairs is having what we call a band-aid approach but nothing is done to really address the problems here."

White: "Are we talking about potentially hazardous things just sitting out there and just by good luck we haven't had a major disaster?"

Gilleneau: "I will say that there's a risk that at any time a major environmental accident can happen there."
White: "Were you surprised by your findings?"

Gilleneau: "Not necessarily on the one dealing with abandoned mines but overall if you consider all the findings that came out of this report and we are also addressing the management by the federal government of toxic substances and also invasive species. What we are saying is that Canada is now having a new kind of deficit which is an environment and sustainable development deficit and I urge the government to start acting on those problems to reduce the deficit."

White: "So you take a look at here's the Yukon which by and large is considered to be a fairly pristine area and your examination shows that's far from the case."

Gilleneau: "Absolutely. We are facing two major problems with respect to environmental contamination and health risk there and I'm just talking about two mines but INAC is dealing with many more sites that can represent a risk."

White: "Give us an example of what could happen if something isn't done at the Faro site?"

Gilleneau: "At the Faro site the water is contaminated with acid and metals and require continuous treatment and there's a potential risk as I said for failure so if the federal government doesn't act right now on those issues – we don't know what can happen but as I said there's a risk for a major environmental incident so what I'm saying is that now the federal government is aware and some money is needed to act on those sites. What INAC was telling us is that so far they don't have the money to deal with those problems."

White: "The Yukon government will be taking over responsibility for mining next year. What advice would you have for it in terms of environmental safeguards."

Gilleneau: "My understanding is even though the Yukon government will be in charge of that the responsibility with those abandoned mines will stay within the federal government so it is the one that will have to deal with those issues but certainly one thing that will be very important for the mines that are in operation and the new mines that will be operating in the north would be to have a full security deposit to avoid problems like the one we have now."

White: "That's something of course that have been talked about before and that mining companies say just isn't on. They're not interested in that at all."

Gilleneau: "But the mining company, as far as I understand it, won't have the choice.

To get their license they will have to provide the full security deposit in the future."

White: "How are we going to find money to clean up these abandoned minesites?"
Gilleneau: "That's a good question. In fact those abandoned mines that we're talking about are now the responsibility of the federal government and if it applies the polluter principle(?), in this case the federal government will have to find the money to clean up those sites but I'm not in a position to tell

you where the money should come from."

White: "Thanks."

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OCTOBER 23, 2002
7:30 A.M.
CBC WHITEHORSE NEWS TRANSCRIPTION

ABANDONED MINESITE CLEANUPS IN THE NORTH

WHITEHORSE: (Stacy McGaghey) Ottawa is admitting it has resorted to band-aid solutions in dealing with abandoned mines in the Yukon. The federal government is promising improvements in the wake of a stinging report by Canada's auditor general but Yukon miners remain skeptical. (Brian Boyle) When it comes to the federal government's handling of abandoned mines in the north, the buck stops at Ian McGregor's desk. McGregor says the government simply hasn't put up enough money and he admits the millions of dollars that are being spent aren't really cleaning up anything. (McGregor) "We have not had adequate funds to clean up these sites so in that sense when the auditor general says it's a band-aid I think that's not an unreasonable assessment." But McGregor says that's going to change. He's confident the auditor general's report will pry more cleanup money out of the hands of the federal Liberals but Yukon miners don't want to see government officials getting a blank cheque. Yukon Chamber of Mines president Mike Power says so far experienced Yukon mining companies are being cut out of the cleanup projects. (Power) "Why aren't these people being employed in this project? Why is this being done secretly? Why is there no public accountability for the way the money's being spent?" Powers says Ottawa spent $12 million dollars at the Faro mine last year but no real cleanup work was accomplished. He's also worried that legitimate mining companies could now be asked to post unrealistic cleanup bonds based on the money the government has already wasted with its band-aid approach.

WHITEHORSE: (McGaghey)(6:30) Federal officials admit they are barely keeping up with the problems of abandoned mines in the Yukon. They're now spending more than $13 million dollars a year on maintenance at Yukon mines but they admit real little cleanup work has been done. Yukon miners say that cleanup work has to be done but they don't want to see government officials getting a blank cheque. Yukon Chamber of Mines president Mike Power says so far experienced mining companies are being cut out of the cleanup projects. (Power) "If you invite the government in to do these projects and

there's no public accountability the cost will be horrific and future mining operations will be assessed bonds on what it's cost cleanup operations in the past. The analogy I like to use is it's like going on vacation and inviting a contractor in, telling him to fix your house and giving him a blank cheque. Well that's effectively what we've done with mining reclamation in the north." Power says Ottawa should allow mining companies to bid on the cleanup work. He says that will help keep costs down and could help put Yukoners to work.

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ABANDONED MINES THREATEN ENVIRONMENT, HEALTH

By Donald McArthur, News Reporter

The federal government's "Band-Aid" approach to maintaining abandoned mines in the North will cost taxpayers more in the long run and could lead to "significant environmental damage," according to a federal report.

"Some abandoned mines in the North represent a serious threat to human health and the environment," Johanne Gelinas, the Commissioner of the Environment and Sustainable Development, says in a report tabled in Parliament this week.

"In some cases, time is running out, and there could be significant environmental damage if nothing is done."

Gelinas said the cleanup of abandoned mines in the North will cost at least $555 million, and the federal government will spend $26 million this year alone "to prevent water contamination and protect human health and the environment."

The massive public expense of cleaning up the sites oozing with cyanide and arsenic is the result of DIAND's historical failure to ensure mining companies provided adequate financial security to cover cleanup costs, said Gelinas.

The Yukon is slated to take control of mining in the territory under devolution on April 1, 2003, and Gelinas said it is incumbent on governments to obtain that financial security before allowing mining to proceed.

"It is impossible to apply the 'polluter-pays' principle after a mining company has declared bankruptcy;' said Gelinas.

While Gelinas lauded DIAND for taking corrective measures to ensure future mine owners

pay to clean up their own messes, she criticized Ottawa for failing to provide DIAND with a long-term source of federal funding.

"We hope that the federal government will not wait until a major environmental incident happens before it fixes the problems," Gelinas said in the report.

"Without sufficient funding to implement long-term solutions, (DIAND) is currently covering only the basic care and maintenance work.

"This work entails merely patching and reacting to problems instead of preventing them.

"This Band-Aid approach is not an optimal use of public funds, considering the rapidly growing costs of care and maintenance associated with delaying decisive action:"

The budget for Environment Canada has fallen by six per cent over the last decade, although the government's overall budget has increased 17 per cent, according to the report.

Gelinas said DIAND is "scrambling to keep up with the demands," and the workload is affecting the day-to-day operations of regional offices in the Yukon and the Northwest Territories.

As an example, neither office can prepare annual inspection plans for water licences for hard
rock mining because "staff are too busy dealing with the day-to-day problems of abandoned mines;' according to the report.

There are 17 "highly-contaminated" abandoned mine sites in the North, although three of them have been cleaned up.

Four of those sites are in the Yukon and 10 are in the Northwest Territories, according to the report.

The Yukon sites are, the Arctic Gold and Silver mine, the Clinton Creek mine, Faro mine, Ketza River mine and Mount Nansen trine.

The worst of this bunch, Faro and Mount Nansen, came under special scrutiny in the report, along with Giant mine and Colomac mine in the Northwest Territories.

These four were selected because they represent 90 per cent of DIAND's "environmental and financial burden" caused by abandoned northern mines.

The Faro mine, an open-pit operation that produced lead, zinc and silver between *1969* and *1998* (save for a four-year hiatus), is plagued by surface-water contaminated with acid and metals, especially zinc.

Ongoing collection and treatment of surface water is necessary, and action has been required on several occasions to "prevent or deal with uncontrolled discharges of contaminated water into nearby water courses."

According to Environment Canada and Fisheries and Oceans Canada, "the acid-generating material on-site, if not properly stabilized, has the potential to release metals into the Pelly River for centuries to come."

The federal government has spent $14 million maintaining the site from July, 1998, to April, 2002, and the total cleanup bill is estimated to come to at least $200 million.

"Because of the characteristics of this mine, and the nature and size of the contamination, this site will likely require long-term management, even after cleanup;' according to the report.

The cleanup costs for Mount Nansen mine, run by BYG Resources until it went into receivership in 1999, are estimated at $6.3 million.

About $4 million has been spent on the site between August, 1999, and April, 2002.

The report states that the mine could be cleaned up within three years, but DIAND officials indicate they don't have the funds to do so and that legal issues must still be resolved.

"While the final cleanup is delayed, and (DIAND) continues to spend money on care and maintenance, the amount of Canadian taxpayers' money spent on this site continues to grow," said the report.

The federal government will continue paying for the messes created on its watch when devolution occurs in April.

The federal government will also continue to pay for the cleanup of the territory's seven Type 2 sites, including Faro and Mount Nansen that have significant environmental

liabilities.

By BUSINESSMAN FLOATS NOVEL RECLAMATION PLAN
Donald McArthur, News Reporter

An optimistic local entrepreneur says he will have $40 million in a Whitehorse bank within 60 days earmarked for mine reclamation if the federal government provides matching funds.

Mel Fredrickson, president of Northern Reclamation Solutions Inc. of Whitehorse, said the cash is coming from energy industry players who want to assert their credentials as environmentally conscious companies.

"They're looking for additional exposure," said Fredrickson.

"It's like sponsoring a hockey tournament. It's like sponsoring a golf tournament."

Fredrickson listed Exxon Mobil, BP and Phillips as companies that will have donated to the fund by the end of November.

He has set up a bank account with a non-profit designation called the Resource Reclamation Fund.

The willingness of the federal government to provide matching funds is necessary to make the project a go but Ottawa has so far been unwilling to get on board, said Fredrickson.

Brett Hartshorne, the manager for Waste Management at the department of Indian and Northern Affairs, said DIAND hasn't discouraged Fredrickson's efforts but has yet to see any evidence industry players were lining up behind the proposal.

"We've seen things from Mr. Fredrickson but never anything from anybody else," said Hartshorne.

"We are open and receptive to any ideas that will help us get through this issue of these abandoned mines and reclamation process in the North."

Ottawa came under fire this week from the Office of the Auditor General for failing to provide DIAND with enough money to deal with the pressing problem of abandoned mines in the North.

A report tabled in parliament Tuesday said the lack of funding has forced DIAND to take an ineffective - and potentially dangerous - "Band-Aid" approach to a very serious problem.

Fredrickson unveiled his proposal at a news conference convened by the independent MLAs, who have been spearheading efforts to develop a local mine reclamation industry.

The independents plan to oppose a water licence application by Deloitte and Touch, the Outside

company acting as receivers for the bankrupt Faro mine.

The company says it is necessary to keep maintaining the mine rather than beginning a reclamation project that could cost between $200 million and $400 million.

The federal government agrees and continues to pay the company millions of dollars as it maps out a detailed reclamation plan.

Fredrickson said his company could begin reclamation work in Faro as early as next Spring, if the industry money and matching federal funding fell into place.

"I will make believers out of you," he said.

Independent MLA Mike McLarnon said Fredrickson was just one example of Yukoners exploring options to clean up abandoned mines with Yukonbased labor and expertise.

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facsimile transmittal

To:	Wes Treleaven	Fax:	416-601-6292
From:	Dana Haggar	Date:	27/10/2002
Re:		Pages:	3
CC:			

☐ Urgent ☐ For Review ☐ Please Comment ☐ Please Reply ☐ Please Recycle

Wes,

Thought this will make your day. Issued for press release Monday.

Regards,

Dana

Dana

YUKON LIBERAL PARTY
302 JARVIS STREET
WHITEHORSE, Y.T. Y1A 6K8

PRESS RELEASE
OCTOBER 28, 2002

THE INDEPENDENTS ARE WRONG, WRONG, WRONG!

In mid-August the three independent members of the Yukon Legislature came to Faro to explain their views of how the electoral process in Yukon should work. But most importantly, Faroites came out to the meeting to hear the allegations and complaints they were making about mis-management, indiscretious contract awards and the fact that 38 local people were employed at the mine. As well, one member had to explain his foolish remarks about "turning out the lights at Faro". This remark is no longer a joke to us anymore. It's an insult. (Coincidentally that person is not re-running for public office in the current election.) So much for his commitment.

Then, to illustrate how cras these individuals are, they then issued a phony press release saying how large a crowd they got in Faro when in fact the crowd was more motivated by anger than the independents' views on political reform.

To explain a little bit further everybody should understand that Deloitte Touche was appointed interim receiver by the Ontario Commercial Court in April, 1998. This is the same court (and the same senior judge) who handled Curragh's receivership in 1993. So at least this judge understands the situation better than somebody new. The appointment was handled by an Ontario court, rather than the Yukon court because Anvil Range's head office was in Toronto. That is where they filed for court protection from the creditors. After Deloitte Touche sorted out the books they attempted to sell the mine to somebody who would operate it. There were no buyers. This brings us to the situation we are at today. The next obvious step was the reclamation process which Deloitte Touche is obligated to in their capacity as property managers. They are simply fulfilling a role imposed on them by the court process which is doing the mine reclamation and employing Yukoners (mostly Faroites). IS THERE SOMETHING WRONG WITH THIS PROCESS? I THINK NOT!

In addition to the 38 people from Faro who were employed, four also came from Ross River and eight were employed by a Ross River contractor. This is also helping immensely to build relationships with our neighbouring community.

The independents also tried to infer that there was mismanagement of Yukon tax dollars in the process. There was not. All of this money comes from federal coffers, specifically the Department of Indian Affairs and Northern Development. There are no Yukon tax dollars at risk here at all.

The receiver has awarded contracts in Yukon where the required expertise was available. There are many Yukon suppliers who are benefiting from this reclamation work. There are some contracts (like the supply of lime) that are not available in Yukon and are not even available in Canada. The lime has to come from the northern US states through the port of Seattle.

The other thing that makes me extremely angry is that nobody in Yukon ever objected to the $1,000,000 dollars a day for 365 days a year for 23 years that our mine at Faro generated for the Yukon's economy. Everybody was quite happy with their paycheques and the business revenues. So what if it costs a little bit to clean up now when the good times are over!

To be perfectly clear:

I support local employment opportunities for the residents of Faro, Ross River and Yukon. (It would appear the independents do not. They talked about bringing in workers from Ontario and U.S. universities).

I support the work of Deloitte Touche and the related contractors in performing the reclamation work at the minesite properties. This ~~much needed work will provide employment opportunities in the Faro area~~ for the next 5-8 years.

Yours truly,

Jim McLachlan
MLA

THE YUKON NEWS FRIDAY, OCTOBER 25, 2002

Abandoned mines threaten environment, health

By Donald McArthur
News Reporter

The federal government's "Band-Aid" approach to maintaining abandoned mines in the North will cost taxpayers more in the long run and could lead to "significant environmental damage," according to a federal report.

"Some abandoned mines in the North represent a serious threat to human health and the environment," Johanne Gelinas, the Commissioner of the Environment and Sustainable Development, says in a report tabled in Parliament this week.

"In some cases, time is running out, and there could be significant environmental damage if nothing is done."

Gelinas said the cleanup of abandoned mines in the North will cost at least $555 million, and the federal government will spend $26 million this year alone "to prevent water contamination and protect human health and the environment."

The massive public expense of cleaning up the sites oozing with cyanide and arsenic is the result of DIAND's historical failure to ensure mining companies provided adequate financial security to cover cleanup costs, said Gelinas.

The Yukon is slated to take control of mining in the territory under devolution on April 1, 2003, and Gelinas said it is incumbent on governments to obtain that financial security before allowing mining to proceed.

"It is impossible to apply the 'polluter-pays' principle after a mining company has declared bankruptcy," said Gelinas.

While Gelinas lauded DIAND for taking corrective measures to ensure future mine owners pay to clean up their own messes, she criticized Ottawa for failing to provide DIAND with a long-term source of federal funding.

"We hope that the federal government will not wait until a major environmental incident happens before it fixes the problems," Gelinas said in the report.

"Without sufficient funding to implement long-term solutions, (DIAND) is currently covering only the basic care and maintenance work.

"This work entails merely patching and reacting to problems instead of preventing them.

"This Band-Aid approach is not an optimal use of public funds, considering the rapidly growing costs of care and maintenance associated with delaying decisive action."

The budget for Environment Canada has fallen by six per cent over the last decade, although the government's overall budget has increased 17 per cent, according to the report.

Gelinas said DIAND is "scrambling to keep up with the demands," and the workload is affecting the day-to-day operations of regional offices in the Yukon and the Northwest Territories.

As an example, neither office can prepare annual inspection plans for water licences for hard-rock mining because "staff are too busy dealing with the day-to-day problems of abandoned mines," according to the report.

There are 17 "highly-contaminated" abandoned mine sites in the North, although three of them have been cleaned up.

"Without sufficient funding to implement long-term solutions, (DIAND) is currently covering only the basic care and maintenance work."

Four of those sites are in the Yukon and 10 are in the Northwest Territories, according to the report.

The Yukon sites are, the Arctic Gold and Silver mine, the Clinton Creek mine, Faro mine, Ketza River mine and Mount Nansen mine.

The worst of this bunch, Faro and Mount Nansen, came under special scrutiny in the report, along with Giant mine and Colomac mine in the Northwest Territories.

These four were selected because they represent 90 per cent of DIAND's "environmental and financial burden" caused by abandoned northern mines.

The Faro mine, an open-pit operation that produced lead, zinc and silver between 1969 and 1998 (save for a four-year hiatus), is plagued by surface-water contaminated with acid and metals, especially zinc.

Ongoing collection and treatment of surface water is necessary, and action has been required on several occasions to "prevent or deal with uncontrolled discharges of contaminated water into nearby water courses."

According to Environment Canada and Fisheries and Oceans Canada, "the acid-generating material on-site, if not properly stabilized, has the potential to release metals into the Pelly River for centuries to come."

The federal government has spent $14 million maintaining the site from July, 1998, to April, 2002 and the total cleanup bill is estimated to come to at least $200 million.

"Because of the characteristics of this mine, and the nature and size of the contamination, this site will likely require long-term management, even after cleanup," according to the report.

The cleanup costs for Mount Nansen mine, run by BYG Resources until it went into receivership in 1999, are estimated at $6.3 million.

About $4 million has been spent on the site between August, 1999, and April, 2002.

The report states that the mine could be cleaned up within three years, but DIAND officials indicate they don't have the funds to do so and that legal issues must still be resolved.

"While the final cleanup is delayed, and (DIAND) continues to spend money on care and maintenance, the amount of Canadian taxpayers' money spent on this site continues to grow," said the report.

The federal government will continue paying for the messes created on its watch when devolution occurs in April.

The federal government will also continue to pay for the cleanup of the territory's seven Type 2 sites, including Faro and Mount Nansen that have significant environmental liabilities.

Contact Donald McArthur at dmcarthur@yukon-news.com

PAGE 03/03
11/01/2002 15:41 403-250-5330

Businessman floats novel reclamation plan

By Donald McArthur
News Reporter

An optimistic local entrepreneur says he will have $40 million in a Whitehorse bank within 60 days earmarked for mine reclamation if the federal government provides matching funds.

Mel Fredrickson, president of Northern Reclamation Solutions Inc. of Whitehorse, said the cash is coming from energy industry players who want to assert their credentials as environmentally conscious companies.

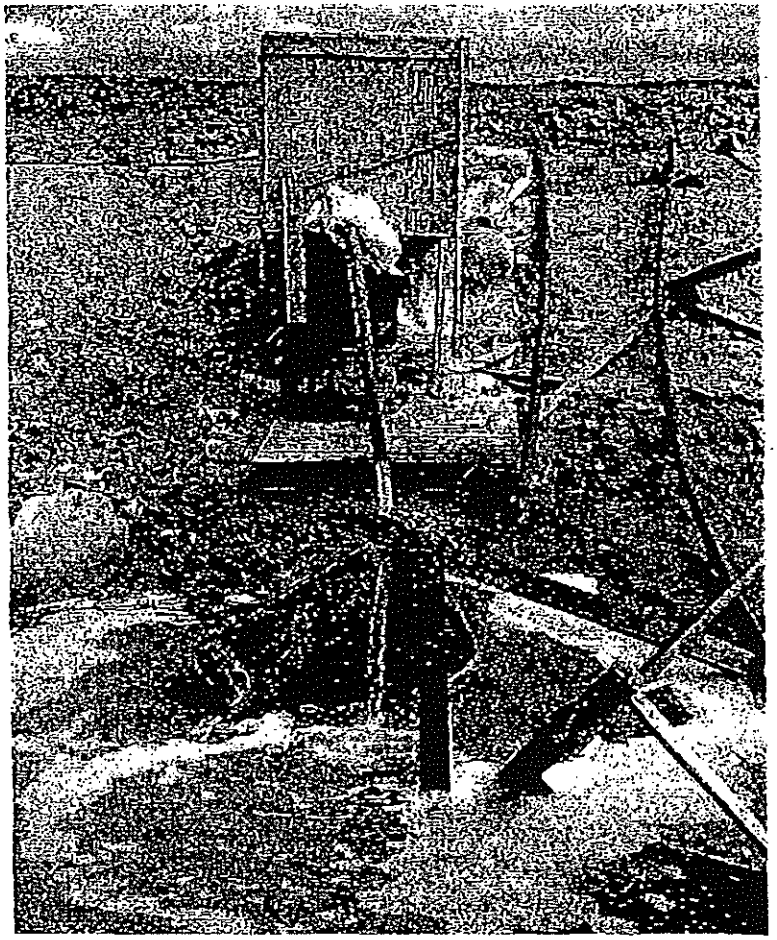
"They're looking for additional exposure," said Fredrickson.

"It's like sponsoring a hockey tournament. It's like sponsoring a golf tournament."

Fredrickson listed Exxon Mobil, BP and Phillips as companies that will have donated to the fund by the end of November.

He has set up a bank account with a non-profit designation called the Resource Reclamation Fund.

The willingness of the federal government to provide matching funds is necessary to make the project a go but Ottawa has so far been unwilling to get on board, said Fredrickson.



NEWS file photo

MINING MESS... Companies from the energy industry may donate money for mine reclamation. Above, is the Mount Nansen site near Carmacks.

Brett Hartshorne, the manager for Waste Management at the department of Indian and Northern Affairs, said DIAND hasn't discouraged Fredrickson's efforts but has yet to see any evidence industry players were lining up behind the proposal.

"We've seen things from Mr. Predrickson but never anything from anybody else," said Hartshorne.

"We are open and receptive to any ideas that will help us get through this issue of these abandoned mines and reclamation process in the North."

Ottawa came under fire this week from the Office of the Auditor General for failing to provide DIAND with enough money to deal with the pressing problem of abandoned mines in the North.

A report tabled in parliament Tuesday said the lack of funding has forced DIAND to take an ineffective — and potentially dangerous — "Band-Aid" approach to a very serious problem.

Fredrickson unveiled his proposal at a news conference convened by the independent MLAs, who have been spearheading efforts to develop a local mine reclamation industry.

The independents plan to oppose a water licence application by Deloitte and Touch, the Outside company acting as receivers for the bankrupt Faro mine.

The company says it is necessary to keep maintaining the mine rather than beginning a reclamation project that could cost between $200 million and $400 million.

The federal government agrees and continues to pay the company millions of dollars as it maps out a detailed reclamation plan.

Fredrickson said his company could begin reclamation work in Faro as early as next Spring, if the industry money and matching federal funding fell into place.

"I will make believers out of you," he said.

Independent MLA Mike McLarnon said Fredrickson was just one example of Yukoners exploring options to clean up abandoned mines with Yukon-based labor and expertise.

See related article on page 6.

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Memo

Deloitte & Touche

Date: September 9, 2002

To: Greg Stevens, Ken Pearl, Valerie Chort, Shannon Glenn, Doug Sedgwick

From: Wes Treleaven

Subject: Anvil Range Mining Corporation

Attached is a letter that I have sent to Ken Kraft, along with an August 30th new release, which was heard on CBC Radio.

I believe we will have to reassess the level of time involvement and what work is being done and clearly set this out in our next court report.

I'd ask that everyone carefully consider the amount of time that is being spent on each component of this assignment and hopefully during the fall, activity levels will come more in line with our proposed budgets.

Regards,

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Direct: (416) 601-4482
Email: wtreleaven@deloitte.ca

Deloitte & Touche

September 9, 2002

Ken Kraft
Heenan Blaikie
Suite 2600
South Tower, Royal Bank Plaza
Toronto, ON M5J 2J4

Dear Ken:

RE: ANVIL RANGE MINING CORPORATION

Attached for your information is another news release, which was carried on CBC Whitehorse.

In preparing our next court report, we must address the inaccuracies, which are being reported. Care and maintenance costs are not $12 million and are more in line with $5 million with reclamation study costs making up the difference. Also, there are not dozens of lawyers and accountants on the job. We must take the time to outline the staffing levels and how our accounts are handled.

I believe we need to get to court earlier that we originally planned and we must take the time to carefully set out our professional accounts, as these will be carefully scrutinized by a number of stakeholders.

Yours very truly,
DELOITTE & TOUCHE INC
in its capacity as Interim Receiver of
ANVIL RANGE MINING CORP.

Per:

Wes A. Treleaven, CA, CIRP
Senior Vice-President

AUGUST 30, 2002
12:00 P.M.
CKRW WHITEHORSE NEWS TRANSCRIPTION

FARO MINE

WHITEHORSE: (Peter Carr) Yukon's three independent MLAs, Mike McLarnon, Wayne Jim and Don Roberts say their town hall meeting in Faro last night was well attended. About 40 Faroites turned out for the meeting and McLarnon said it was a definite give and take session and a lot of excellent information was exchanged. Don Roberts said Faro residents are obviously very concerned with any plans involving their economic well being and many want some honest answers from Yukon politicians as to where they can become involved.

-30-

REGIONAL INFORMATION OFFICE
AUGUST 30, 2002
12:00 P.M.
CBC WHITEHORSE NEWS TRANSCRIPTION

FARO MINE

WHITEHORSE: (Peter Novak) Federal authorities say millions of dollars in maintenance costs at the Faro Mine is money well spent and they say they're bound by court orders to keep paying that money to a Toronto based company but that could change soon. (Vic Istchenko) Care and maintenance costs at Faro are up to $12 million dollars this year and Yukoners are starting to question why Toronto consultants Deloitte and Touche keep getting the work. As court appointed receivers they have over a dozen lawyers and accountants on the job, each charging hundreds of dollars an hour in professional fees. Ian MacGregor is DIAND's director general for Natural Resources in Ottawa. (MacGregor) "Well, we certainly think we're getting value for money." MacGregor says Deloitte and Touche are recognized experts in the field. For now he says they can't be replaced. (MacGregor) "They were appointed by the court and until the court proceedings move to conclusion it's not even an option."

Those court proceedings could end soon, as early as next month and that would put the Toronto receiver's status at the mine in question. Still, MacGregor won't speculate. (MacGregor) "I think they're doing a good job but that does not mean that it wouldn't change in the future." With at least $100 million dollars in work outstanding at Faro, Yukon politicians want Deloitte and Touche fired from the job. They say Yukon companies could be doing the work much more efficiently.

Minesite polluters make off with taxpayers' money

By Kathy Ramsey
News Reporter

Ottawa must get serious about cleaning up the Yukon's abandoned minesites, says the Yukon Conservation Society's Bob Van Dijken.

The current mess at the Faro mine is just one example of the dangers of federal inaction, he said.

Zinc-contaminated water at the Faro mine has flooded into surrounding creeks.

And that could contaminate the salmon-bearing Pelly River, Northern Affairs' regional manger of water resources David Sherstone said last week.

On December 14th, a letter from Sherstone to the mine's receiver, Deloitte and Touche, confirmed that water, with zinc levels above what the license permits, flowed into surrounding creeks in early December.

According to that letter, zinc concentrations in the some of the tailings ponds had reached 10 times the allowable limit.

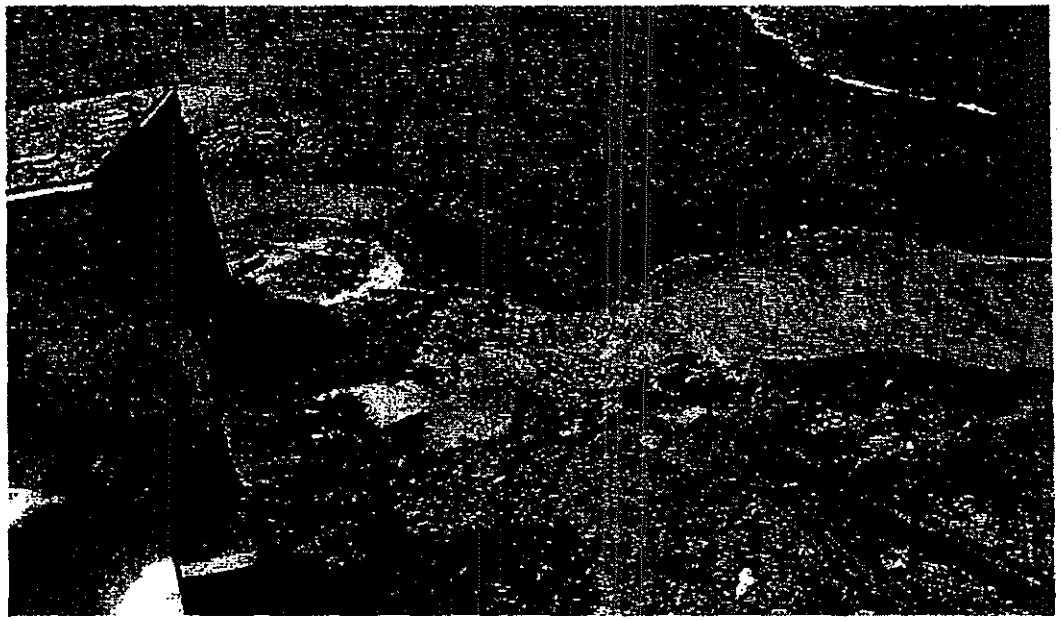
Water levels have been steadily rising at the mine since September, the result of heavy rains and unseasonably warm temperatures, said Sherstone.

As a result, workers have been unable to stem the flow of polluted water from containment ponds, he said.

Too much zinc is now collected behind the facility's final dam to be discharged into the environment and the water continues to rise, increasing pressure on the dam, he said.

However, this potential calamity shouldn't have come as a surprise, said Van Dijken.

Northern Affairs knew that a disaster could occur at the Faro mine long before September, he said.



NEWS file photo

TOXIC SOUP...Cleaning up the mess left behind at the Mount Nansen minesite may cost taxpayers over $8 million.

The receiver warned Ottawa more than a year ago that it would have trouble meeting environmental objectives in 2000, he said.

"The possibility that progressive changes in water chemistry could jeopardize, or even prevent, the fulfillment of environmental objectives during the year 2000 Faro pumping water-treatment program is a concern," the mine's receiver said in a report on its September-to-November, 1999, operations.

In the report, the receiver requested additional resources and expertise to help deal with the problem.

And a proposed amendment to the Yukon Waters Act to allow moving some of the 55 million tonnes of acid-generating tailings to the Faro pit was abruptly dropped in August, said Van Dijken.

That would have taken the tailings further away from surrounding creeks, lessening the chances that pollution would occur.

"From our point of view there are two issues," said Van Dijken.

"There's the immediate issue of water quality.

"But the bigger concern is that we've been dealing with this on a day-to-day basis since the mine shut down.

"We're getting, it seems, no closer to a long-term solution.

"And we're seeing this again and again: there's flaws in the system. We have to sit down and we have to deal with those flaws and fix them."

The beleaguered local department of Northern Affairs is unable to enforce the flimsy environmental protection legislation, he added.

"Water resources is understaffed and under-resourced, and all they're doing is running between emergencies."

Northern Affairs employs only three full time inspectors, who must supervise 91 water licenses scattered around the territory.

And that's why the Ketza River mine has been without a water license for more than two years with no repercussions, Van Dijken said.

"It always appears that the industry gets the benefit of the doubt, and it always appears to be the taxpayers that get burned every time that happens," he said.

"Until the industry proves itself we need zero-tolerance."

Cleaning up a toxic soup of cyanide, arsenic and zinc at BYG Natural Re[illegible]es Inc.'s Mount Nansen mine cost taxpayers nearly $2 million last year, and could eventually cost more than $8 million.

That mine turned a traditional hunting area of the little Salmon-Carmacks First Nations into an environmental catastrophe.

Six employees are currently at work on a installing a proper water-treatment system at the Faro mine, and Northern Affairs will be hiring more shortly.

While the cost of that has not yet been determined, taxpayers will be paying the tab.

But even more needs to be done, said Van Dijken.

Tailings need to be moved further away from creeks; more dams are needed, and waste rock needs to be removed, said Van Dijken.

"There are a number of big-ticket items."

Until these disasters are prevented, Ottawa will have to increase the amount it spends cleaning up and maintaining mine operations in the territory, he said.

It spent $3 million last year, but much more is needed to solve the problem, he said.

"How many years do you spend $3 million or $5 million really not doing anything but maintaining the status quo.

"When do you actually deal with the issue?

"You can spend $50 million now, or you can spend $50 million in five years after spending at least $3 million each of those years doing nothing."

Adequate legislation and proper enforcement could stop that money from being required in the future, he says.

"We need to work now to ensure that the legislative regime is changed so we don't end up the more mines we get, the more disasters we, as taxpayers, end up having to clean up afterwards."

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1. D&T Team Calendar
AVR - EHS PRE 2002
AVR -EHS 2002
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455-02 Environmental Maintenance (ENVMNT)
455-03 Rose Creek Tailings (RCT)
455-04 Renewable Energy (RNNRG)
455-05 Risk Based Management (RBMGT)
455-06 Vangorda Acid Rock Drainage (VARD)
455-07 Vangorda Water Treatment (VWT)
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Closure Alternatives Workshop
Colomac_Project_Initial_Workshop.pdf
Colomac_Project_Work_Plan.pdf
Definition of a proponent
Draft documents of Project Description
Environmental Matters section of Court report.msg
Public Meetings - August 2002
Advertisements for Meetings - Guidelines and Thoughts
Faro Meeting - Friday, Aug 23 6:30pm
Questions for L.Gomm re the Public Meeting Process
RERC Meeting - Wednesday, Aug 21 9:00am

Ross River Meeting - Thursday, Oct 10

a note created by Kristine MacPhee on 12 Jun 02

DATE: Thrusday, October 10, 2002
TIME:
3:00 pm - 4:30 pm Council Meeting
7:00 pm Community Meeting

LOCATION:
Name: School, Gathering Room
Tel # of Council office is 867-969-2278/Fax #: 867-969-2405
Contact: Doris Dryer; George Smith (867-969-2095)

REFRESHMENTS
D&T to organize for 30 to 50 people: juice, coffee, poster; tl

FORMAT
Translation to be provided by George Smith for $250/day, in preperation.
Oral presentation style + posters
Shannon to send information one week beforehand plus text

ADVERTISEMENT
SG to co-ordinate with George to have bilingual advertising p

Comments

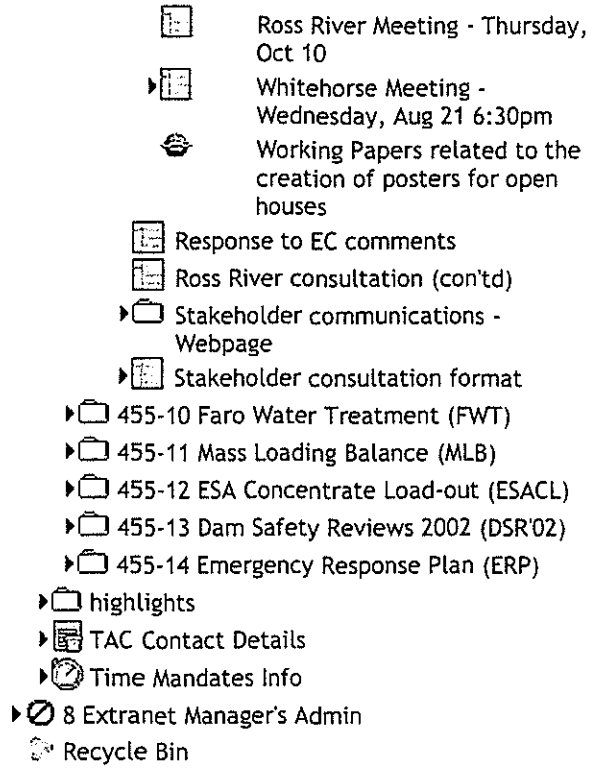
Conversation with Anne Rheault re. format of Ross River n
Glenn, Deloitte & Touche, 26 Jul 02 12:47pm)
Conversation between VC/SG and Anne Rheault SNC-Kaska

See attached email message from Anne Rheault.

Ross River is one of five Kaska nation. Those five have the J shareholders agreement, an acceptance of responsibility to v and members in capacity-building. When they do business w they get asked to use their expertise which is not usually in t business. Allows them to stay in these communities. RR seer in her style given her previous experience in this area.

Ross River has a post meeting after TAC and shared concern Anne after the Faro meeting.

- Size of Ross River is 300.
- AR has done community meetings for 10 years.
- Seven came at evening meeting + George. Jenny is C style is very traditional. No interruptions. Wes's styl tone was noticed in terms of standing and interupting assertions of his role. Speaking uninterrupted.
- Protocols on all aboriginal communities: meet with C receive an invitation.
- Translator will be needed - e.g. elders in particular n



are available. George Smith. Ask them to suggest a around Council meeting. Translator would need to b regarding content. Kaska language might not have al There is an expectation that we pay for the translat acknowledge we would pay.

- Lot of legacy issues around Faro. Poor community. S able to benefit more than others around economic ac Very small communities. If someone is successful, tl jealousy of other contractors (native and non-native)
- Language to use is at a Grade 8 level.
- Powerpoint was not appropriate except pictures and Handout can be distributed too.
- Tent names for people.
- Acronyms: hand out glossary and translation.
- Education about CEAA process.
- Have to let the legacy issues out. Second half arounc
- Style about commentary during presentation: some ir McLeod and others) will interupt alot, more so during meeting.
- Create gaps in the presentation without moving from the questions to happen. Don't necessarily invite the on about past transgressions of others. Listen, thank wouldn't challenge an individual asking. Suggestion c preferably. Victor Matanda, e.g. who is used to comi with the community. Victor is from Dawson City and Kaska community in many years. He is a legend in th to engage in the South government 28 years ago. He is a skilled negotiator. He is not yet 60. He is part o to Ottawa to ask to govern themselves: historically n different although they are under the Indian Act.
- Location in school: gathering room (25 or 30). Gymn Need to get good understanding a week of time abou
- We are planning flyers. Jason would be responsible c

- Storyboards.
- Avoid technical terms.
- Two questions asked of Wes were not answered. Mus then justified.
- Minute taker: record every question that was asked a Subsequent to meeting, review for gaps and accurac
- Agenda: Chief opens the meeting. Introduction befo councillors sets the stage. An elder leads a prayer. (
- Kaska Nation: if there is a death in the community, e Cancelled meeting.
- Confirmation about a week before meeting; before g from Toronto.
- Council would like to have material beforehand. Kas invited.
- Flyers: work with Jason. 867-969-2832 fax: 2525 ack Don't reference the Faro/Whitehorse meetings in the mention it in the meeting. Regarding non Ross River this is a question for Chief Caesar to answer.

Clarification of communication channels. Advisors should be stuff on behalf of the Chief. Chief works on fax very well to Respect noted as a lack in the meeting. Wes' presentation w and consequently as disrespectful and confrontational.

Smith on October 7 to discuss the translation of the presenta would have a second meeting the next day without the propo representatives. The community did its own advertising for

In attendance were:
RRDC: Jack and Jenny Caesar, Jason Acklack, George Smith, (chair)
SNC-Lavalin: Steve Lindley, Ann Rheault
RRDC legal counsel: Rod Snow
DIAND Environment Directorate: Leslie Gomm
D&T: SG/VC/WT
GLL: SM

Key observations regarding the discussion:

- RR representatives did not ask questions. It was eithe legal counsel or SNC
- much of the conversation centered around seperating and the DTA/TAC/long term closure consultation.
- RR wants to be involved
- questions arose regarding the management structure
- tone was positive

The community meeting itself was postponed until further n the community which happened during the council meeting. was supposed to attend. She arrived nonetheless but the me

An exchange of voicemails occured during the following wee the date of October 25 selected. A thank you letter was sen the October 10 meeting and confirming our attendance for C

Ross River October 25 meeting (Shannon Glenn, Deloitt 30 Oct 02 12:15pm)
The rescheduled meeting took place on October 25 at 4 pm (original 3 pm due to travel delays. The community was alert o'clock in the morning about the delay and were cooperative

Attendees all traveled together to RR by plane. They includ

- D&T: SG
- GLL: SM
- DIAND Environment Directorate: Derek Fraser, Ian Ch
- DIAND Water Resources: Bill Slater
- YTG EMR: Rod Hill

In attendance for the community include J & J Caesar, John, Smith, Doris Dryer, Tim Moon, and two or three others who c through. Also, a representative from Chamber of Mines First was in attendance.

The attached presentation was given. The same posters as u Whitehorse and Faro August meetings were used, minus the ' response to observations made by SNC regarding Leslie's cont material. Attached handouts were circulated. In addition, I Directorate circulated handouts regarding the CEAA process effect.

The conversation centered on approximately the same them meeting with Council. These included the need for RR invol distinction and linkages between the WLR and long term pla

training and employment opportunities. Doris Dryer did muc
and questioning on behalf of the community.

The second half of the meeting consisted of a conversation t
government representatives on the status of Ketsa. D&T did
conversation.

Conversation with SNC Lavalin re. EAR (Shannon Glenn,
30 Oct 02 12:15pm)
Call with SNC (Steve Lindley), D&T (SG) and GLL (SM, ED, GF

Wants to go through the minutiae without going through pro
misunderstandings of technical issues.

- Sludge management: Water treatment plant in the m
recirculated. The sludge goes to the Faro pit.
- Vangorda is a seperate plant. This summer is first ye
spec water: plan is to recycle the water back into the
near the plant. Therefore, the clarifying pond is the
- Engineering contingencies to be included in the wate
- Vangorda sludge management: time to study is availa
than on the Faro side. Have we modeled the rate of
losing. Trigger: water quality in that pond. Sludge
water licence application.
- Graphical view of the water balance: flow sheet that
moving from one facility to the next for the applicati
- Sources of water to the Vangorda pit need to be iden
- Ore transfer pad: which direction does it drain: it str
into the pit and a portion drains towards the north. I
to West fork of Vangorda Creek. Sample point V17A.
before closure planning
- Trigger for starting pumping: based on weather and c
At the end of pumping season, the objective is to lea
capacity. Making explicit when the summer treatme
- Groundwater considered a waste discharge: X13 at tc
has the regulatory. Their comments will include con
groundwater boundary.
- ARD study: nature of it: to get back to SL by VC.
- Uncertain activities: how to apply these to avoid incr
licence and to maintain sufficient flexibility to allow
timely basis.
- EAR: details of changes to the monitoring plan to be

Follow-up call with GLL

- Applying a discharge criteria to groundwater was the
terms of comments they may have.
- ERP: DIAVIK ERP will provide good guidance. GLL to t
- EAR timelines: need to hang on (in recognition of buc
we see the Guidelines but the Project Description cai
has changed.
- Guidelines will likely not be until late november or e
- Project Description, GLL sections to SG by November
be done by November 22.

Call from Doris Dreyer regarding invoices (Shannon Gle

21 Nov 02 3:14pm)
DD called to request payment on the outstanding invoices fo
non-technical reviews.

SG said that payments would not be made until the reports a

DD requested that payment for translation be made by wire
Account 9877 3101054 for George Smith.

Payment to RRDC (Shannon Glenn, Deloitte & Touche, 4
See H20LR-wp-112902-Payment of RRDC non-technical revie
individuals.doc regarding payment.

Further to the payments being issued, WT received a fundin
of $7380 for Doris Dreyer, which is in $2080 less than the $9
December 2, 2002. A stop-payment was made on the cheque
cheque will be re-issued. Doris Dreyer confirmed in a phone
one trip was made.

Attachments

FW Meeting in Ross River.msg

RE Ross River Meeting.msg

Letter to the Chief re meeting format

H20LR-l-081502-Change of date for Far public meeting1.do

RRDC technical and non-technical review correspondence.pdf

Fax re poster translation for RR meeting.doc

H20LR-wp-100502-Ross River Public Meeting Handout Material Rescheduled meeting.doc

Ross River meeting October 25.ppt

H20LR-wp-112902-Payment of RRDC non-technical review - Covering letters for individuals.doc

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    - AVR -EHS 2002
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        - RFPs - Proposals -Authorizations
        - Work Papers
          - Closure Alternatives Workshop
          - Colomac_Project_Initial_Workshop.pdf
          - Colomac_Project_Work_Plan.pdf
          - Definition of a proponent
          - Draft documents of Project Description
          - Environmental Matters section of Court report.msg
          - Public Meetings - August 2002
          - Response to EC comments
          - Ross River consultation (con'td)
          - Stakeholder communications - Webpage
          - Stakeholder consultation format
      - 455-10 Faro Water Treatment (FWT)
      - 455-11 Mass Loading Balance (MLB)

Ross River consultation (con'td)

a note created by Shannon Glenn on 18 Nov 02

For details regarding consultation with Ross River Dena Council up to the development of guidelines, see Ross River Meeting - Thursday, Oct 10

A further funding for proposal has been sent to the Interim Receiver per the attached.

Follow-up was initiated to clarify what is meant regarding a DIAND workshop for December (see DIAND workshop) as well as what the role of George Smith is.

Comments

Forward funding request to DIAND ED and discussion (Shannon Glenn, Deloitte & Touche, 19 Nov 02 2:16pm)
Had a conversation with Derek Fraser to mention that RRDC likely looking for funding to review the Guidelines.

Forwarded the funding request to him and cc'd L. Gomm.

Call from Doris Dreyer (Shannon Glenn, Deloitte & Touche, 20 Nov 02 3:26pm)
VC received a call from Doris Dreyer, transfered to SG.

Community contact:
it is unclear and they recognize they need to sort it out. For now, it is Doris for the non-technical review and Ann Rheault for the technical review.
SNC handles the financial aspects of the requests.

Request for funding
the "DIAND meeting" makes reference to the meeting with Leslie to review the Guidelines
they need the money because it takes alot of work to review information. Much of the justifiation centred around the need to review reports that should have been reviewed during the technical/non-technical reviews and the lak of substantial monies for these reviews
"the government needs to take this seriously"
SG asked that they send a letter justifying the need for that level of work
also, SG reiterated the need for a comprehensive funding request and suggested that SG/VC/DD could have a three-way converstion to that effect, which makes a distinction between funding required for TAC and funding requred for the WLR.

- 455-12 ESA Concentrate Load-out (ESACL)
- 455-13 Dam Safety Reviews 2002 (DSR'02)
- 455-14 Emergency Response Plan (ERP)
- highlights
- TAC Contact Details
- Time Mandates Info
- 8 Extranet Manager's Admin
- Recycle Bin

Status of the technical/non-technical report
SG mentioned that D&T does not have a copy and that DIAND has only a draft copy that cannot be circulated
DD seemed surprised and said she would call Derek to release it (she later called back to say that Chief sign-off was still required)
the Chief is overworked

Status of community liaison
SG explained negotiation that took place with George Smith, which concluded that he would be conflicted if he worked for both the community and for the proponent
SG mentioned that we are looking at an alternative: Kathleen Souza
DD to provide her phone number 250-651-0023 (in Atlain) and 867-969-2716 (in RR)

SG left two messages with Derek Fraser providing him with an update on this.

Update regarding RRDC request for funding (Shannon Glenn, Deloitte & Touche, 21 Nov 02 3:17pm)
SG faxed request to Derek Fraser.

Doris Dreyer called. Upon consultation with Ann Rheault, they feel that a written justification for their involvement is not required. I clarified that the Interim Receiver is not requesting a justification for involvement but is requesting a justification of the level of funding requested.

SG added that the same approvals need to be obtained from DIAND Ottawa for the funding. It would be simplified for both them and us if an overall funding request was made.

Funding discussion with DIAND Ottawa (Shannon Glenn, Deloitte & Touche, 4 Dec 02 4:51pm)
On November 26, a meeting was held with

- DIAND ottawa (Robert Lauer)
- DIAND wr (Dave Shrestone)
- YTG (Marg Crombie and Peter MacDonald)

They instructed us not to respond to the RRDC funding request to review the draft guidelines until meetings to take place in Whitehorse during the week of December 2. The likelihood that RRDC will receive further funding throught the IR is slim. RRDC will be refered to a contact person in DIAND (likely Jennifer).

On November 28, Steve Morison had a breakfast with Chris Cuddy in Calgary to discuss general approach re. RRDC. Nothing definitive was discussed.

On December 4, Doris Dreyer enquired to SG regarding the status of funding proposal and I said that there were meetings taking place in Whitehorse and that we had been instructed to wait until that time before

getting back to RRDC. This conversation also focussed on payment for Doris' component of the non-technical review.

February 27 2003 contact with RRDC (Shannon Glenn, Deloitte & Touche, 27 Feb 03 4:20pm)
SG left a message with Land Claims office to contact Jason or George for March 10 visit and for TK sessions. This followed Leslie Gomm meeting with RRDC regarding guidlines.

Attachments

FW Budget Estimates and Funding Requests for Faro Mine Water License Application Process.msg

Map Search
EHS
1 ARMC Interim Receivership
2 Contact Information
3 EHS, TAC Reports and Data
4 Listing of Final Project & Study Reports
5 eRoom Reference Material
6 Collaboration Area
1. Open Discussion Forum Anvil Range
455-01 Fresh Water Supply Dam (FWSD)
455-02 Environmental Maintenance (ENVMNT)
455-03 Rose Creek Tailings (RCT)
455-04 Renewable Energy (RNNRG)
455-05 Risk Based Management (RBMGT)
455-06 Vangorda Acid Rock Drainage (VARD)
455-07 Vangorda Water Treatment (VWT)
455-09 Water Licence Renewal (H2OLR)
1. RFPs
2. Communications
Baseline Table of Contents
Comments on EAR
Detailed vegetation sampling design and agency comments
Draft EAR
EAR Guidelines and scope of screening
EAR methodology
GLL Communication Records
H20LR-m-030802-Anvil Range_Agenda_April 14 17.doc
H20LR-m-030802-Anvil Range_Workshop

Ross River TK for EAR

a note created by Shannon Glenn on 13 Jun 03

Additional information regarding communication and consultation with RRDC can l found at Ross River Meeting October 10 2002 (which includes details of the techni non-technical review of the Project Description) and Ross River consultation (con

A conference call was held March 12 2002 regarding reaching an understanding re the collection of Traditional Knowledge from the community of Ross River that wc complement the information collected in 1999. Prior to the conference call, Shei forwarded to Shannon summary notes of the meeting (attached). Shannon Glenn, Greer, Doris Dreyer and George Smith were on the call. Sheila Greer is an indepe anthropologist working for GLL. An agreement in principle was reached that this collection of TK would proceed, tentatively during the week of March 24. Sheila attend part of the interviews and then Doris and George would complete the interviews. It was agreed that a Traditional Knowledge Protocol would need to b developed. SG met George Smith later that day in Whitehorse and provided topog maps of the area to be used for the interviews.

During the week of March 18, GLL, Sheila Greer and D&T worked on a draft protoc letter of understanding (see attached drafts). In particular, SG and Sheila held conversations on March 19 (resulting in a draft titled 'Re. Traditional knowledge a RRDC') and on March 20 and 21st. SG discussed the TK Protocol with Wes Treleave March 19. D&T is not a party of the protocol except as client on the EAR. On Mar Sheila received a request from Doris Dreyer for help regarding a research proposa attachment 'Cut and Paste of things are looking ok'). On March 21, Sheila sent a f then revised letter of understanding to Dr. Heyer Meyers regarding the work to be

Chief and Council were apparently informed regarding these negotiations (per att email). A confirmation letter to that effect was sent by D&T to Chief Caesar rega the IR's understanding that the Chief was aware that this agreement had been rea between GLL and Doris Dreyer.

Interviews proceeded during the week of March 24, with Sheila attending at the beginning of the week. Approximately 16 people were interviewed. Sheila was pr to meet with six individuals. They received honorariums paid out of the GLL White office the following week. See attached email 'Re. Ross River Report.msg'.

The results of the study were received from Doris Dreyer during the week of April (per attached email). It contained ex-post revisions to the TK protocol, whereby interview transcripts would not be available to Sheila Greer as well as a seven pa summary report. A follow-up call was held between Dr. Heather Meyers, GLL, an Dreyer on April 24, summarized in attached email.

Input from RR was included either in the Consultation section of the EAR in Volum (Section 3.4) or in Volume II of the EAR (primarily Section 2.9).

Regarding costs, a contribution agreement was set up between GLL and UNBC. Tl invoice was $6900 from Doris Dreyer. The invoice for George Smith is attached fo $5125 including fees and expenses. Other costs included honorariums for the interviewees.

Shannon Glenn and Leslie Gomm met with Chief in Council on May 6th to distribut EAR (three copies). Leslie mentioned that YTG EAU has money (approximately $6000) to help review the EAR. Shannon introduced the three volumes of the EAI

Agenda_FEB 20.doc
H2OLR-013003-m-Licensing strategies going forward.doc
Linkage with Project Team
Planning of Open Houses
Project Description Inputs
RERC meetings
Ross River TK for EAR
Water Board
Weekly Tuesday conference calls, starting July 30
3. Working Papers
4. Interim Reports
5. Discussion Forum
455-10 Faro Water Treatment (FWT)
455-11 Mass Loading Balance (MLB)
455-12 ESA Concentrate Load-out (ESACL)
455-13 Dam Safety Reviews 2002 (DSR'02)
455-14 Emergency Response Plan (ERP)
455-15 ARD study
455-16 - June 2003 Technical Workshop
7 D&T Workspace
8 Extranet Manager's Admin
Recycle Bin

in particular, focussed on the relevant sections of Volume 2 and 3 as described ab
meeting was held on May 7th with Doris Dreyer, George Smith, Shannon Glenn anc
Stephen Morison. The conversation was similar.

On May 30th, a conference call was held between Stephen Morison, Sheila Greer a
Doris Dreyer regarding concerns from Doris regarding completeness of informatior
provided in the EAR. Spefically, points raised included:

·Water quality testing in traditional areas of concern to the RRDC including the confluence of Anvil Creek and the Pelly River.
·Access to hunting areas beyond the security gates at the mine site.
·Overall effect of the tailings areas and safety concerns (e.g. open pits) for wildli migrate through the Anvil Range Mine Complex.
·The concern of litter such as barrels, rusty cables and other across the Anvil Ran complex.

A conference call between GLL, Sheila Greer and D&T was held on June 13th to re draft response.

Comments

Attachments

ross materials forwarded to D Dreyer .msg
methodology - interviewing.msg
Draft agreements
Correspondence with Dr. Heather Myers
cut and paste on things are looking o k .msg
are inforn
letter of invitation & understanding Doris Dreyer.msg
Fwd letter of invitation & understanding Doris Dreyer.msg
Ross River Update.msg
Re ross report.msg
Fwd Faro TK protocol and report.msg
Sumi Conf Call- Mey D Drey
George's Invoice.msg

bcc: Shannon Glenn

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Partner

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Email: wtreleaven@deloitte.ca

Deloitte & Touche

June 12, 2002

COPY

Robert Lauer
Department of Indian and Northern Affairs Canada
Les Terrasses de la Chaudière, Room 607
10 Wellington St.
Ottawa, Ontario
K1A 0H4

Dear Robert:

RE: ANVIL RANGE MINING CORPORATION ("ANVIL RANGE")

During my recent visit to the mine site, I had an opportunity to meet with representatives of Ross River Dena/Kaska, the Town of Faro and the Yukon Territorial Government. I wanted to provide to you a brief update regarding these meetings.

On Friday, May 24th, I meet with Chief Jack Caesar, Mr. Allan Edzerza representing the Kaska Nation, Ms. Anne Rheault of SNC Lavalin and several other members of the Ross River Dena Council. A great deal of information was exchanged between the parties and I do not consider this meeting to be a consultative one, but more of an information exchange. The following key points were raised by Ross River/Kaska representatives:

- They made it very clear that they expect to have a full role in the future reclamation work at the Anvil Range mine site. They do not believe that they have had any involvement whatsoever to date.

- They advised that they have no confidence in the information being provided by the Interim Receiver to the Court and demanded that "funding for their involvement in the process" be made available to them. This is a very serious issue in that they made it clear that without such funding, they would take an obstructive role, throughout the regulatory process. They maintain that they lack the technical knowledge to provide appropriate input to the decision-making process regarding reclamation projects. To ensure their participation, they indicated that funding must be made available for their advisors, so that they can become actively involved in the process.

- They advised that they believe that in all contracts/RFPs issued by the Interim Receiver, that an inclusive First Nations clause be a stipulated condition.

- They also advised that they want the Interim Receiver in its next Court Report to include the following statements:

  - That the Ross River Dena/Kaska have not been properly consulted.

  - Issues regarding the Anvil Range property will be part of their land claim negotiations.

  - They are not a party to the Devolution Transfer Agreement even though they were involved in the negotiations.

  - It is their intention to pursue legal court challenges because they do not believe that the two levels of government have consulted with them nor are they following the definition of consultation as set out in the Devolution Transfer Agreement.

  - They want it to be known to the Court that they are particularly upset that the MOU did not proceed as planned as they had negotiated certain socio economic benefits that would have benefitted the First Nations.

I advised that it was our intention to apply for a new water licence and that a Project Description would be filed with CCEA before the month end. It is also our intent under the renewed water licence application to reexamine the Technical Advisory Committee's role and work with its members to enhance the communication and consultative process. Based on the exchange between ourselves, I believe that Ross River Dena/Kaska will demand some form of exclusivity or a single purpose role in the ongoing development of the reclamation plan. It is our intention to include them with others and we will endeavor to ensure that we communicate and consult with them as much as possible.

As you know, members of the Ross River Dena did not attend the 1999 nor the 2000 TAC meeting and it was only after several requests that they attended the 2001 meeting.

We are currently working on a RFP for the slot cut in the Freshwater Dam Spillway and a key component of that contract is the production of riprap. We have had discussions with Tim Moon, a contractor from Ross River, and have advised him that we are prepared to have him complete this portion of the contract. The RFP actually reads as follows:

The Interim Receiver seeks to proactively assist in developing the capabilities of local and First Nation contractors, and therefore will be entering into a separate contract with Tim Moon Construction Ltd. of Ross River, Yukon, to carry out to a portion of the above work. Tim Moon Construction Ltd. will develop access to the riprap borrow area, re-open the borrow area, then drill, blast, excavate, process, load and haul to a stockpile(s) near the FWS Dam, all of the riprap required for the Construction. Specifications for the riprap are to be provided by the Design-Builder as part of the Construction Documents. The Design-Builder will be responsible for loading the riprap from the stockpile, hauling and placing the riprap and/or construction and placing other erosion protection measures.

As you will note from the above, we are making real efforts to include and have as many job opportunities available for Ross River as possible.

I meet with Mr. Mel Smith, the Mayor of Faro and the members of the Town Council. I provided them with a full update on our activities and answered a number of their questions. Mr. Smith raised two issues in particular. One being the sign off of partial discharges with respect to house sales and upon following this up with Ken Kraft, our counsel, I discovered he was holding certain discharge requests for clarification with the lawyer representing Faro real estate. Prior to leaving Faro, I confirmed with Mr. Smith that the issues causing the slight delay had been resolved and that I would sign the documents upon my return to Toronto. These have been signed and forwarded to Yukon council. During the meeting, I was advised by town council members that over 50 homes have been sold in the Town of Faro since they started a sales program, January 1, 2001.

The second rumor was that the Anvil Range was going to become a Northern Contaminated Waste Site. I again advised the town council that the Interim Receiver has never been approached by any third party nor has the Interim Receiver taken any steps to propose to any regulatory body that the Anvil Mine site would be converted to any form of contaminated waste site. I did advise town council that over the past month, a number of truckloads of contaminated soil from the Lomak terminal had been transferred to the mine site. As you are aware, the Lomak terminal land is owned by the Yukon Government and in turn it was leased to the City of Whitehorse. After an extensive environmental review, it was determined that a certain portion of the property had been contaminated with Zinc concentrate as it was a wash and transfer site prior to the concentrate being shipped to Skagway. After receiving all of the appropriate regulatory approvals, a certain quantity of soil has been transferred to Faro and has been deposited in an appropriate area on the mine site.

Mr. Jim McLachlan, the Minister of Justice and the MLA for the Faro Region introduced me to Mr. Mel Fredrickson, President of Northern Reclamations Solutions Inc. Mr. Frederick has been meeting with a number of Yukon representatives proposing that he be allowed to attend at the mine site and immediately commence reclamation work on the Faro property. I advised Mr. Fredrickson that there would be a lengthy regulatory process that will have to be completed prior to any reclamation work being done. During our conversation, Mr. Frederickson advised that another project that he is spearheading is to create contaminated waste management sites within the north and has proposed a site near the Town of Faro. I have written to Mel Smith advising him of this and forwarded to him a copy of Mr. Frederickson's proposal.

While in Faro, Mr. McLachlan contacted me on several occasions and asked that I attend a meeting on Tuesday, May 28th to meet with the Premier and certain members of the Cabinet. I prepared a short presentation to bring the parties up to date as to the Interim Receiver's administration, some of its key activities and the way forward which really covered the water licence renewal application and how we would go forward to prepare a comprehensive abandonment and reclamation plan. Some questions were raised and these generally dealt with the socio economic impacts on the local communities.

These meetings, I believe were quite productive and is a starting point for the consultation process that we are putting in place. The community consultation process will be a key area that we will have to manage carefully as we move forward with the water licence renewal application and the work to complete a comprehensive abandonment plan.

I'll continue to keep you advised of other important meetings with local stakeholders as they occur.

If you have any questions regarding these meetings, please do not hesitate to contact me. I would appreciate receiving your comments as to whether or not any potential funding could be made available to the Ross River/Kaska to ensure their active participation within the process.

Yours very truly,
DELOITTE & TOUCHE INC
in its capacity as Interim Receiver of
ANVIL RANGE MINING CORP.

Per:

Wes A. Treleaven, CA, CIRP
Senior Vice-President

C: Joanna Ankersmit, DIAND
Ken Kraft, Heenan Blaikie

Shannon Clear

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Partner

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Email: wtreleaven@deloitte.ca

Deloitte & Touche

June 10, 2002

COPY

Jack Caesar
Chief, Ross River Dena Council
General Delivery
Ross River, Yukon
Y0B 1S0

Dear Chief Caesar:

RE: ANVIL RANGE MINING CORPORATION ("ANVIL RANGE")

At the conclusion of our meeting held in Ross River on Friday, May 31st, I again extended an invitation to those attending to have a tour of the Anvil Range mine site. Allen Edzerza indicated that he was going to be in the area at the end of June. It was agreed that we would arrange a tour for you, Allen and other members of the Ross River Dena Council for 2:00 pm on Friday, June 28, 2002.

As we have a great deal of work to attend to at the site, we are scheduling a trip to Faro so that either myself or Greg Stevens from our office, will be there that week. I and other members of our staff will also be in Faro the week of July 15th for the TAC meeting, which will take place on July 17th with a follow up meeting to be held on July 18th. We have forwarded to you separately, correspondence regarding these meetings and the Project Description which has been filed with CEAA.

I would like to reconfirm that you, Allen and other members of council still plan to attend on this date for a tour. As it is the Friday before the holiday July 1st weekend, I want to confirm our travel arrangements and confirm with Dana Haggar tour arrangements. Would you please contact me as soon as possible to reconfirm your plans for attending and the number of attendees. If this is not a convenient date, we are certainly prepared to reschedule to accommodate you and other members of council for a tour.

I again wish to thank you for attending the meeting on May 31st. A lot of information was exchanged. I have spoken to representatives of DIAND in Ottawa regarding your request for funding to assist Ross River/Kaska in the process as it moves forward. I'll continue to pursue this and will advise you once the government has gotten back to me.

Deloitte
Touche
Tohmatsu

I'm also pleased to say that the Ross River employees who are working full time at the mine site are doing well. I understand from Mr. Haggar that Tim Moon has been working at the site this past week and he has also involved other Ross River residents on various work projects.

If you have any questions or wish to discuss matters with me, please do not hesitate to contact me at my Toronto office number (416) 601-4482.

Yours very truly,
DELOITTE & TOUCHE INC
in its capacity as Interim Receiver of
ANVIL RANGE MINING CORP.

Per:

Wes A. Treleaven, CA, CIRP
Senior Vice-President

C: Allen Edzerza, Assistant National Kaska Negotiator, Kaska Nation
Ann Rheault, Vice President, Aboriginal Affairs, SNC Lavalin Inc.

Ross River Dena Council

ROSS RIVER, YUKON
Y0B 1S0

PHONE 969-2278

August 2, 2002

Wes A. Treleaven
Senior Vice-President
Deloitte & Touche Inc.
Interim Receiver of Anvil Range Mining Corp.
BCE Place
181 Bay Street, Suite 1400
Toronto, ON M5J 2V1

Dear Mr. Treavlen:

On behalf of the Ross River Dena Council (RRDC) group I would like to thank you for the tour of the Faro mine following the meeting on July 17,2002. We appreciate the time and effort, and the opportunity to see the complex of the site.

We viewed this as an important step in gaining further knowledge so that we can more fully participate in dealings concerning the site and are now preparing for the community meeting scheduled in Ross River on October 10,2002.

RRDC has decided that a comprehensive review of the two-volume Project Description needs to be undertaken for Council and community members to understand the current situation at the mine site and the proposed future activities. We understand that the Interim Receiver works closely with DIAND, who is the exclusive funder of the site. In this regard, we request that you, in conference with DIAND, consider funding the work plans – technical and non-technical reviews and legal advise – to facilitate the meaningful participation of RRDC and community members.

Work Plan

1. Technical Review: performed by Kaska/SNC-Lavalin Inc.

   - Professional engineers/technicians review of Project Description to develop a Key Issue Analysis
   - Integration with Non-Technical Review analysis
   - Preparation of information package for RRDC, community members and the Kaska Nation
   - Presentation of information to community by Kaska/SNC-Lavalin Inc.
   - Total estimated cost: $15,000

2. Non-Technical Review: performed by Ross River Dena Council

   - George Smith, Jason Acklack and Doris Dreyer for RRDC and Victor Mitander for Kaska nation review of Project Description to develop a key Issue Analysis
   - Integration with Technical Review analysis
   - Preparation of information package for RRDC, community members and the Kaska Nation
   - Presentation of information to community by George Smith and Victor Mitander
   - Total estimated cost: $15,000

3. Legal Counsel: performed by Derek Ground, counsel to RRDC; Rod Snow, counsel to the Kaska Nation (mining); Stephen Walsh, counsel to the Kaska Nation (land claims and constitutional issues)

   - Research and analysis on regulatory issues
   - Preparation report to RRDC
   - Attendance at community meeting
   - Total estimated cost: $25,000

At the meeting in Faro you advised that the Canadian Assessment Act (CEAA) does not fund participation in the process. We would like to ensure our request is considered beyond that process. RRDC has unsurrendered Aboriginal rights, title and interests in and to the lands on which the mine is situated. However, over the many years the mine has operated, our people have had little benefit from it. Since their involvement has been small, there is not a lot of broad community knowledge of the situation there and little understanding of the implications to the community. We believe that we have unique rights and interests that deserve special attention, this funding request being one.

RRDC and community members want to be able to have meaningful participation in events concerning the Faro mine. They have selected experts and advisors who are very capable and will ensure the investment by DIAND provides greater capacity for understanding and involvement.

We await your early advise on the request.

Yours truly,

Chief Jack Caesar

Cc: Robert Lauer, DIAND, Ottawa fax: 819-953-9066
Leslie Gomm, DIAND, Whitehorse fax: 867-667-3216
Ann Rheault, SNC-Lavalin, Toronto fax: 416-231-5356
Derek Ground, Toronto fax: 416-604-3596

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Deloitte & Touche

September 10, 2002

Chief Jack Caesar
Ross River Dena Council
Ross River, Yukon
YOB 1S0

Dear Chief Caesar:

RE: ANVIL RANGE MINING CORPORATION

Today, I spoke to Derek Ground regarding your funding request letter of August 2nd and our response thereto. I'm writing to you regarding this matter and have copied Mr. Ground.

Following the meeting, which I attended in Ross River on May 24th with yourself, Mr. Allan Edzerza representing the Kaska Nation, Ms. Ann Rheault of SNC Lavalin and several other members of the Ross River Dena Council, I wrote to DIAND and summarized the key points of discussion. At that time, I advised that Ross River had requested that funding be provided for their technical advisors and for the Ross River Dena Council so that they could become actively involved in the process.

Following the TAC meeting held in Faro, Yukon on July 17th, I again discussed Ross River's funding issues with DIAND representatives. They are aware and sensitive to the needs and provided positive indications that this matter was being seriously considered.

On the afternoon of Friday August 2nd, my office received your faxed letter requesting specific funding as set out on a schedule attached thereto. Unfortunately, I did not see this fax and was away from my office until August 27th. During the week of August 19th, I was in the Yukon attending meetings in Whitehorse and Faro and became aware of the letter during meetings with representatives of DIAND. They advised that they were seriously considering the request as submitted.

Following my return, I have had ongoing discussions with DIAND, Ottawa. We recognize the need to have the community of Ross River prepared for the public meeting to be held in Ross River on October 10th. I am pleased to advise that I have received DIAND's concurrence to make a level of funding available to ensure Ross River's participation in the CEAA review of the water licence application process, which includes the October 10th public meeting.

There are however certain conditions which need to be addressed. The proposed work plan and fees, as set out for the technical and non-technical reviews, is to prepare for the public meeting, which will be held on October 10th. There will be further meetings resulting from the application, which will be filed next

year with the Yukon Water Board. We wish to settle on a one time funding request, which will cover the entire process for seeking a new water licence.

As discussed at the TAC meeting, the current water licences will expire on December 31, 2003. The essence of the Project Description as submitted is to:

1. Continue the current care and maintenance programs at the mine site to protect the environment.

2. Complete and oversee any required emergency reclamation work.

3. Complete certain projects which will be in harmony with the long term closure plans that will be developed and

4. File by 2006 a Final Closure and Reclamation Plan.

Ross River's active involvement in a reconstituted TAC committee and support funding for their ongoing involvement on the committee is separate from the application for renewal of the water licenses noted above. It is however, top of mind, and is being pursued by us in ongoing discussions with DIAND.

Recognizing that time is a factor, we believe that we can settle the funding issue for the water licence process quickly. We require a full description of the technical review to be completed, by whom and the estimated hours and hourly rate of the technical advisor to be hired by Ross River. We request that you provide us with the total estimated technical fee and work plan so that payments can be made by us based on submitted invoices and appropriate support.

We will require additional support for the non-technical review and again, each invoice to be submitted to us must set out details of what has been done in line with the proposed work plan.

You should understand that once we have received the CEAA guidelines, we will be submitting an Environmental Assessment Report, which we believe Ross River will ask its technical advisor to review and comment on. Once this has been filed, we anticipate being in a position to file our application to the Yukon Water Board. We believe that once the initial technical and non-technical reviews have been completed, that there should not be a need for further detailed analysis, only time involvement for proper representation at community and Water Board meetings.

With regards to proposed legal fees, we have not received approval for the amount as requested. DIAND is prepared to accommodate a lesser amount for legal fees for the entire process and we wish to discuss this with Mr. Ground as soon as possible.

It is our understanding that many parties have completed their review of the Project Description and have submitted their comments to DIAND Environment Directorate. It is our understanding that Ross River will not submit any comments until after the October 10th meeting. It is our desire to ensure that this meeting is as productive as possible to ensure that there is no further delay within the process. Therefore, we request that you provide to us, as quickly as possible, the proposed fees for the water licence application process and we will immediately respond to your request.

It is our desire not to complicate matters, but to ensure that there is a clear understanding between Ross River, DIAND and the Interim Receiver as to what is to be accomplished and what is to be paid for.

We look forward to further discussions this week, and hopefully work can immediately start to ensure adequate preparation for the October meeting.

Yours very truly,
DELOITTE & TOUCHE INC.
In its capacity as Interim Receiver of
ANVIL RANGE MINING CORP.

Per:

Wes A. Treleaven, CA, CIRP
Senior Vice-President

c: Derek Ground, fax: (416) 604-3596
Ken Kraft, Heenan Blaikie, fax: (416) 360-8425
Robert Lauer, DIAND, fax: (819) 953-9066

Treleaven, Wesley (CA - Toronto)

From: Glenn, Shannon (CA - Toronto)
Sent: Tuesday, September 17, 2002 1:57 PM
To: Chris Cuddy (E-mail); Robert Lauer (E-mail); Joanna Ankersmit (E-mail)
Cc: Treleaven, Wesley (CA - Toronto); Chort, Valerie Jeanne (CA - Toronto)
Subject: summary of meeting today with Derek Ground and Anne Rheault

Dear Chris, Robert, and Joanna

Further to a voicemail that Wes has left for each of you, the following is a summary of a meeting we had today with Derek Ground and Anne Rheault.

The meeting was set following a letter sent by Wes to the Chief (copied to Robert) whereby the Interim Receiver requested a proposal for funding for the participation of Ross River throughout the entire CEAA and water board processes.

The outcome of the meeting was as follows:

- they are not prepared to provide a comprehensive cost estimate for the whole process because of 1) too much uncertainty in the process and 2) they are not able to predict which key issues the community will identify regarding the Project Description. The nature of the key issues identified affects the level and type of involvement required during the CEAA and water board processes.
- they did commit to providing a best guess estimate after the meetings on October 10.
- regarding the proposal they submitted dated August 2, the technical review will involve between $4500 to $6500 for the review, $5500 to attend at the community for the meetings, and approximately $5000 for the preperation of a report and executive summary. They will be providing a more detailed breakdown by Thursday morning. They will also be submitting a more detailed breakdown of the proposed work regarding the $15000 estimate submitted for a non-technical review. In regards to the legal fees, Derek Ground is willing to be flexible and, with the aim to advancing mutual interest of parties, would entertain approximately $20,000 for legal fees (including $ 5 to -7000 for his Yukon counsel and the remainder for his own efforts).
- they made it clear to us that the October 10 meeting will not go forward unless the community feels adequatly prepared for it.

Wes would be grateful to discuss these matters with you to decide on a course of action.

Best regards, Shannon

Shannon Glenn
Manager
Deloitte & Touche, Enterprise Risk Services
Risk Consulting and Regulatory Services/Environmental Services
79 Wellington Street West, TD Centre, Suite 1900
Toronto, ON, Canada, M5K 1B9
Telephone: 416-601-6454
Fax/Télécopieur: 416-601-5902
E-mail: <sglenn@deloitte.ca>

SNC·LAVALIN
Engineers & Constructors

SNC·LAVALIN
ENGINEERS & CONSTRUCTORS INC.
2200 Lake Shore Blvd. West
Toronto, Ontario
Canada M8V 1A4

Telephone: (416) 252-5311
Fax: (416) 231-5356

September 19, 2002

Deloitte & Touche Inc.
In its capacity as Interim Receiver of
Anvil Range Mining Corp.
Suite 1900
79 Wellington Street West
Toronto, ON M5K 1B9

Attention: Wes A. Treleavan, CA, CIRP
Senior Vice-President

Reference: Ross River Dena Council
Technical Review Funding Request

Dear Mr. Treleavan:

We refer to your correspondence to Chief Jack Caesar of September 10th, 2002 and provide the following details on the proposal to conduct a review of the Water License application for the Faro Mine, on behalf of the Ross River Dena Council.

Description of Work

The scope of work provided earlier seems fairly straightforward. A review of the Project Description (Vol.1) and environmental baseline (Vol. 2) will be conducted by analysts in the field of hydrogeology (Helen Jackson, P. Geo.), surface water (Mart Lupp, P. Eng.), mine closure and dam design/operation (Bing Wang, P. Eng.) and environmental impact assessment and permitting (S. Lindley, RPP). Technical memoranda will be prepared by each analyst, to be incorporated into an overall review document. The scope of this analysis will be limited to key issues and observations. This material will be reviewed with leadership of the Ross River Dena Council (RRDC). An information package will be developed from the SNC-Lavalin and RRDC reviews, the purpose of which is to inform Ross River and Kaska Nation members of the results of the review. The package will be written in language which is understandable to lay persons. A senior representative of the SNC-Lavalin review team will travel to Ross River in advance of the Ross River community meeting for the purpose of presenting results of the review and to attending and observe the community meeting.

Team Members

All members of the proposed SNC-Lavalin review team are senior analysts with extensive experience with mining activities. In addition to technical expertise in environmental impact assessment, Mr. Lindley, Director of Environment for SNC-Lavalin Engineers and

Constructors Inc., also has extensive experience in conducting projects on behalf of First Nation communities, in remote locations. Mssrs. Lindley and Wang have both visited the Faro mine site and the Ross River community. Resumes for our key analysts have been forwarded to you by email.

Cost

Cost to complete this work is as follows:

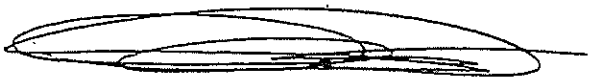
- 4 analysts at 1.5 days each ($1,000 per day per person) = $6,000
- 2 days in Ross River @ $1,000 per day = $2,000
- 2 days to develop the community materials package @ $1,000 per day = $2,000
- travel costs to Ross River return = $5,000

Total cost = $15,000

Invoicing

For such a small project, it is suggested that we work on a lump sum basis. It is suggested we bill in two invoices - 50% at project outset and 50% following Ross River community meeting. Invoicing will be to Deloitte & Touche.

Yours truly,
SNC-LAVALIN Engineers & Constructors Inc.



Ann M. Rheault
Vice-President
Aboriginal and Northern Affairs

cc: Chief Jack Caesar, Ross River Dena Council
Stephen Lindley, SLEC

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Wes A. Treleaven, CA, CIRP

Direct: (416) 601-4482
Email: wtreleaven@deloitte.ca

Deloitte & Touche

September 19, 2002

Ann Rheault
Vice President, Aboriginal and Northern Affairs
SNC Lavalin Engineers & Constructors Inc.
2200 Lake Shore Blvd. West
Toronto, Ontario M8V 1A4

Dear Ms. Rheault:

RE: ANVIL RANGE MINNIG CORPORATION

Further to the meeting held in our office on Tuesday September 17th, during which we discussed the technical review funding request made by Ross River Dena Council, we acknowledge your fax letter of September 19th and emailed resumes of staff members to be involved in completing a technical review of the Project Description and preparation of a report thereon for Ross River Dena Council. The Project Description is in support of our application for a renewal of the water licences for the Faro mine site.

To ensure that the October 10th meeting to be held in Ross River is productive, we confirm that we will make available through the interim receivership, the requested funding for the technical review. As a court officer, we will require the following to support the disbursement:

- The Interim Receiver is to be provided a copy of your report and executive summary provided to the Ross River Dena Council.
- All invoices are to be supported with sufficient detail as to the work done and by whom, and
- all travel costs are to be submitted with supporting invoices.

In view of the timing and amount of work involved, we propose to make one payment upon delivery of the report and supporting invoice.

You advised us on Tuesday that you would not provide at that time, an estimate of a one time funding request to cover the entire water license renewal process. You advised that SNC would have to first consider the key issues and these would only be known once the Project Description had been reviewed and discussions were held with the community of Ross River. Following completion of this phase, we would appreciate receiving such an estimate as requested in our letter of September 10th.

Due to time constraints, we cannot seek pre-authorization of the Court to the entering into of this agreement. However, due to heightened public interest in the process, please understand that all matters will be set out in our next court report.

We will immediately respond in connection to the non-technical review once we have received the proposed work plan. In the meantime, we hope that you will be able to start your work so that the community of Ross River is well prepared for the October 10th public meeting.

Yours very truly,
DELOITTE & TOUCHE INC
in its capacity as Interim Receiver of
ANVIL RANGE MINING CORP.

Per:

Wes A. Treleaven, CA, CIRP
Senior Vice-President

C: Chief Jack Caesar, Ross River Dena Council
Derek Ground, Counsel to Ross River Dena Council
Ken Kraft, Heenan Blaikie
Robert Lauer, DIAND

2525

Ross River Dena Council

ROSS RIVER, YUKON
Y0B 1S0

PHONE 969-2278

September 23, 2002

By Fax: 416 601 5902

Deloitte and Touche Inc.
In its capacity as Interim Receiver of
Anvil Range Mining Corp.
Suite 1900
79 Wellington Street West
Toronto, ON M5K 1B9

Attention: Wes Treleavan, CA, CIRP
Senior Vice-President

Reference: Ross River Dena Council
Non-Technical Review Funding Request

Dear Mr. Treleavan:

We refer to your correspondence of September 10th, 2002 and provide the following details on the proposal to conduct a non-technical review of the Water License application for the Faro Mine, on behalf of the Ross River Dena Council.

Description of Work

The non-technical review of the Project Description (Vol.1) and the environmental baseline (Vol. 2) will be conducted by Doris Dreyer, Jason Acklack, George Smith and Victor Mitander for the Ross River Dena Council (RRDC). The intent of this review will be to highlight key issues and observations for the RRDC and community members. An information package will be developed from the SNC-Lavalin and RRDC reviews, the purpose of which is to inform Ross River and Kaska Nation members of the results of the review.

Team Members

Doris Dreyer holds a B.Sc. Environmental Planning and is a Candidate of MA International Studies at the University of Northern British Columbia (UNBC). She will be responsible for coordinating and managing the non-technical review. Jason is an employee of the RRDC, focusing on land and resource management on Ross River traditional lands. George Smith is Ross River Dena with extensive experience in facilitating focus groups for land use and wildlife studies. Victor Mitander is a member of the Executive Committee of the Kaska/SNC-Lavalin Inc. and is experienced and expert in all matters relating to First Nation communities in the Yukon.

Cost

Cost to complete this work is as follows:

- Coordinator (D. Dreyer) at 3 days ($1,000 per day) = $3,000
- Reviewers (J. Acklack, V. Mitander) at 3 days ($500 per day per person) = $3,000
- 2 days meetings in Ross River October 10 and 11 for Coordinator and reviewers ($4,000)
- reviewing key issues with cross section of community members (G. Smith) 3 days ($500 per day) = $1,500
- preparing community material $500
- Travel Prince George, BC – Ross River (D. Dreyer) = $2,000 (mileage, ~~gas~~)
- Travel Whitehorse - Ross River and return (V. Mitander) = approx. $1,000 (mileage, ~~gas~~, hotels and meals)

¢/ 65/cm

Total cost = $15,000

Invoicing

We request that the coordinator (D. Dreyer) and the reviewers (J. Acklack, G. Smith and V. Mitander) be paid 50% of their initial fees at the outset of the project and that the balance, including that for the 2 days meetings in Ross River be paid following the community meetings. Claims for travel costs for D. Dreyer and V. Mitander will be supported by receipts. The costs of preparation of community materials will be incurred by the RRDC and will be invoiced separately. Invoicing will be to Deloitte & Touche.

Please provide your early advice to Ross River Dena Council on this proposal, copying Ann Rheault at SNC Lavalin.

Souga sin la

Chief Jack Caesar
Ross River Dena Council

Land Claims Department
Ross River Dena Council
General Delivery
Ross River, Yukon

Phone: 867 - 969 -2832
Fax : 867 - 969 - 2525

Fax

To: Valerie Chart	From: Doris Dreyer
Fax: (416)601 ~~615~~ 5902	Pages: 2
Phone: (416)601 6150	Date: Sep. 26th, 2002
Re:	CC:

☐ Urgent ☐ For Review ☐ Please Comment ☒ Please Reply ☐ Please Recycle

Dear Valerie;

attached you will find the addition to the funding proposal of the non-technical review group. I hope that helps.

I will be in the office back on Sept. 30th.

Please let me know if you have any further questions.

Doris Dreyer

	Sept. 25	until Oct.3	Oct.4	Oct.5		Oct. 9	Oct. 10	Oct. 11	Oct. 12	Oct. 13	hours	$/h	$
D. Dreyer											45.5	100	4550
G. Smith											36	100	3600
J. Acklack											35.5	80	2840
V. Mitander											31.5	100	3150
	preparing and writing workplan, finalising funding proposal	reviewing report individually, making notes of key issues	teleconference: reviewing presentation of Deloitte and Touche; discussing which issues have to be covered in non-technical review presentation	preparing community material; further preparing presentation for Oct. 11; organising facilities and food for presentations		meeting as non-technical review group; meeting and coordination with technical review group	meeting with Chief and Council; meeting with Chief and Council and Deloitte and Touche; community meeting lead by Deloitte and Touche; coordination and last touch-ups for community meeting	breakfast with community members; sum-up meeting for technical and no-technical review group - action points - coordination for report; discussion of which further information have to be collected from community members (G. Smith)	Collecting further info from community members (G. Smith); writing report (D. Dreyer)	review and final touch-ups for final report			14140
	km	$/km	$ (incl. Gas)	Hotel (nights)	$/night	$ (Hotel)	Meals (day)	$/day	$ (meals)	$ (travel cost)			
D. Dreyer	3200	0.65	2080							2080			
V. Mitander	840	0.65	546	3	120	360	3	45	135	1041			
													3121
													17261
												Minus $1.500 from other sources	
TOTAL													15761

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Wes A. Treleaven, CA, CIRP

Direct: (416) 601-4482
Email: wtreleaven@deloitte.ca

Deloitte & Touche

September 26, 2002

Chief Jack Caesar
Ross River Dena Council
Ross River, Yukon Y0B 1S0

Dear Chief Caesar:

RE: ANVIL RANGE MINING CORPORATION

Thank you for your letter dated September 23, 2002 and the supplementary information submitted by Doris Dreyer on September 26, 2002, regarding your proposal for completing a non-technical review of the Project Description and preparing an information package for Ross River and Kaska Nation members. The Project Description is in support of our application for a renewal of the water licences for the Faro mine site.

We understand that the non-technical review will be conducted by Doris Dreyer, Jason Acklack, George Smith and Victor Mitander for the Ross river Dena Council (RRDC); and that the purpose of the review will be to highlight key issues and observations for the RRDC and community members. To ensure that the October 10th meetings to be held in Ross River are productive, we confirm that we will make available through the interim receivership, the requested funding for the non-technical review in the amount of $15,761 payable to the above individuals.

As a court officer, we will require the following to support the disbursement:

- The Interim Receiver is to be provided a copy of your information package to be submitted to the Ross River and Kaska Nation members,
- All invoices are to be supported with sufficient detail as to the work done and by whom, and
- All travel costs are to be submitted with supporting invoices.

In view of the timing and amount of work involved, we would prefer to make one payment upon delivery of the information package and supporting invoices. However, we acknowledge that work on the above has commenced and that out-of-pockets travel expenses will need to be funded prior to the end of this project. As such, we are prepared to accept an interim invoice. Please note that the invoices will be paid to the individuals listed in the proposal.

Due to time constraints, we cannot seek pre-authorization of the Court to the entering into of this agreement. However, due to heightened public interest in the process, please understand that all matters will be set out in our next court report.

We look forward to productive meetings on October 10th.

Yours very truly,
DELOITTE & TOUCHE INC
in its capacity as Interim Receiver of
ANVIL RANGE MINING CORP.

Per:

Wes A. Treleaven, CA, CIRP
Senior Vice-President

C: Derek Ground, Counsel to Ross River Dena Council
Ann Rheault, SNC Lavalin
Ken Kraft, Heenan Blaikie
Robert Lauer, DIAND

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Deloitte & Touche

To:	Office/Company:
Leslie Gomm	DIAND Environment Directorate
Fax No:	
867-667-3216	
From:	Date:
Shannon Glenn	September 30, 2002
Number of Pages (including cover sheet):	To confirm receipt, or if you do not receive all pages, please call: (416) 601 6454

Comments:

Leslie,

Please find attached the letters pertaining to funding of Ross River's participation in the CEAA process.

I believe I have already sent you our initial response, dated September 10. You were cc'd on the initial request by RRDC, dated August 2.

The attached is subsequent correspondence, including:

- a letter from SNC-Lavalin providing further details regarding the nature of the technical review
- a response to SNC-Lavalin approving the request for funding, pending conditions outlined in the response
- a letter from RRDC providing further details regarding the nature of the non-technical review
- a supplementary fax from RRDC with addition to funding proposal
- a response to RRDC approving the request for funding, pending conditions outlined in the response

Best regards,

Shannon

Deloitte Touche Tohmatsu

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********** -COMM. JOURNAL- ********** DATE AUG-16-2002 ***** TIME 11:02 *** P.01

MODE = MEMORY TRANSMISSION START=AUG-16 10:58 END=AUG-16 11:02

FILE NO.= 097

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004	OK		914032505330	002/002	00:00'38"

-DELOITTE & TOUCHE INC. -

********** - - ***** - 416 601 6292- **********

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Fax: (416) 601 5901
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Fax

Deloitte & Touche

To:	Fax No:
Chief Jack Caesar – Ross River Dena Council	(867) 969-2405
cc:	
Leslie Gomm – DIAND Environment	(867) 667-3216
Anne Rheault – SNC Kaska	(416) 231-5356
Steve Morison – Gamter Lee Ltd.	(403) 250-5330
From:	Date:
Shannon Glenn	August 16, 2002
Number of Pages (including cover sheet):	To confirm receipt, or if you do not receive all pages, please call:
2	(416) 601 6150

Comments:

RE: ANVIL RANGE MINING CORPORATION

Please see the attached letter.

Deloitte Touche Tohmatsu

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Deloitte & Touche

August 15, 2002

Chief Jack Caesar
Ross River Dena Council
General Delivery
Ross River, Yukon
Y0B 1S0

Dear Chief Caesar:

In reference to our letter to you, dated August 6 2002, please note that the date for the public meeting in Faro has been changed. It is now being held **Friday August 23, 2002 between 5:00 pm and 7:00 pm. at the Sportsman's Lounge**. As well, we will be holding a separate **"Open House" on Thursday August 22, 2002 from 5:00 pm to 7:00 pm in Faro at the Anvil Range Mining Guest House.**

We have just learned that Jason Acklack cannot attend the RERC meeting in Whitehorse on Wednesday August 21. We wanted to ensure that you, members of the council as well as Jason, are invited and welcomed to attend both of these public meetings.

In addition, we would like to extend again an offer to meet with you for a general update, on Friday August 23. We would be available from 9:00 am to 2:30 pm. If you are interested in a meeting, we would be happy to travel to Ross River. If this proposed time does not suit your schedule, then we would look forward to seeing you at our next visit on October 10.

Sincerely,

Shannon Glenn
Manager, Environment Health and Safety

c: Valerie Chort, Deloitte & Touche
Wes Treleaven, Deloitte & Touche
Leslie Gomm, DIAND Environment Directorate
Anne Rheault, SNC-Kaska
Steve Morison, Gartner Lee Limited

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Deloitte & Touche

August 6, 2002

Chief Jack Caesar
Ross River Dena Council
General Delivery
Ross River, Yukon
Y0B 1S0

Dear Chief Caesar:

Thank you for taking the time to join us in Faro for the TAC meeting and to meet with Valerie, Kristine and I on such short notice on July 18, 2002. We are writing in response to an email from Ms. Anne Rheault with respect to a suggested Council and public meeting date of October 10, 2002 in Ross River. As well, we would like to provide you with an update on our follow-up resulting from the TAC meeting of July 17, 2002.

Meetings in Ross River with Council and the Community

We are grateful for your quick response regarding your proposed date of October 10, 2002 for the Council and public meetings in Ross River. We are confirming this date and look forward to collaborating with yourself and Jason Acklack to plan this event.

This meeting is planned for Deloitte & Touche Inc. to solicit input in the preparation of an Environmental Assessment Report. As you are aware, we will be applying to renew our existing water licences, which will expire December 31, 2003. The first step in this process is an environmental assessment under the Canadian Environmental Assessment Act (CEAA) of our planned activities for the next licence period (2004 to 2008). These activities will include continued care and maintenance as well as studies leading to the development and permitting of a Final Closure and Reclamation Plan. These are described in the document entitled "Project Description – Volumes I and II".

In addition to our meetings in Ross River on October 10, we will be holding public consultation meetings in Whitehorse on Wednesday, August 21st and in Faro on Thursday, August 22nd. The purpose of these meetings is to outline our proposed plans and to obtain feedback from our stakeholders. Those of us attending will include myself, Ms. Valerie Chort, Mr. Wes Treleaven, and Ms. Kristine MacPhee, our retained sub-consultant for the environmental assessment, Mr. Steve Morison of Gartner Lee Limited as well as Ms. Leslie Gomm, DIAND Environment Directorate. Ms. Gomm is managing the environmental assessment process under CEAA for DIAND.

Regarding the format of the meeting, we understand from Ms. Rheault that the following schedule would accommodate your needs:

3:00-5:00 pm	Meeting with Band Council
5:00-7:00 pm	Supper Break
7:00 pm	Community Public Meeting

We understand that we are to coordinate with Jason Acklack regarding meeting logistics and would be grateful for his input and help on publicizing the meeting within the community. At this time, our plan is to hold the public meeting in the school, in either the Gathering Room or the gymnasium depending on attendance. We will be providing refreshments at the meeting. In terms of location, it would be helpful as well if Jason could let us know where the meeting with Council will be held.

We are planning to hire a translator for the public meeting and would appreciate your assistance in identifying someone who could help us in this capacity. Our understanding is that the usual rate is $250/day for this service. Our intent, to facilitate the work of the translator, is to provide this person with as much material as possible prior to the meeting. Please let us know whether a translator would be desired for our meeting with Council.

As an alternative to a presentation format for the meeting, we have received a suggestion from Ms. Gomm that an 'open house' style of meeting is a format that also works well. In an open house, posters are set up with explanations regarding the projects and different tables are set up at intervals between the posters with printed explanatory material. Representatives from Deloitte & Touche, Gartner Lee Limited and DIAND Environment Directorate would be available to answer questions. The advantage of this format is that more people may have a chance to ask questions. Please indicate your preference for either the presentation or open-house format. If the open house option is selected, we would like to offer a presentation to the elders, with translator, in addition to the open house meeting for the general community.

Finally, for the public meeting, depending on the format chosen, we intend to bring a printed version of our presentation and / or any material that may be helpful in understanding the process. We will coordinate with Jason regarding the required number based on approximate attendees. For the meeting with Council, we will be sending to your attention an information package including a detailed agenda for participants no later than one week prior to the meeting. We propose to send ten (10) such packages but if you require more, please let us know.

We look forward to planning these meetings and welcome any further suggestions you might have.

July 17, 2002 Technical Advisory Committee (TAC) Follow-up

As we discussed, we have been encouraged by discussions that we have had with DIAND regarding the creation of a revised Technical Advisory Committee, which would reflect the original technical intent of the committee as well as the current status of the mine site. Our understanding of our conversation was that the outlook for funding to support stakeholder involvement in such a committee was positive. Further to your letter to Mr. Treleaven on the question of funding, dated August 2nd, we intend to continue our conversation with DIAND regarding stakeholder funding and are hoping to be able to provide a more definitive answer to this question in the near future.

Our plan is to issue the minutes of the July 17, 2002 TAC meeting by Friday, August 9. A proposed revised structure for the TAC will be following by the middle of August. We look forward to your feedback on our proposal.

Finally, as we will be in Faro on August 22 and 23, 2002, we are available if either yourself, Jason or George Smith would like to meet to receive an update on DIAND funding discussions as well as to discuss your thoughts on the revised TAC structure.

Closing

Thank you once again very much for extending the invitation to meet with Council and the community on October 10. We look forward to the meeting and the discussion. We share the positive sentiments you expressed to us on July 18 and hope that this meeting is a step towards closer collaboration in relation to the Anvil Range property.

If you have any questions, please do not hesitate to contact me at 416-601-6564 or Valerie Chort, National Practice Leader, Environment Health and Safety at 416-601-6147. In addition, Ms. Leslie Gomm is also available for questions, particularly with regard to the CEAA process. She can be reached at (867) 667-3865.

Sincerely,

Shannon Glenn
Manager, Environmental Services

c: Valerie Chort, Deloitte & Touche
Wes Treleaven, Deloitte & Touche
Leslie Gomm, DIAND Environment Directorate
Anne Rheault, SNC-Kaska
Steve Morison, Gartner Lee Limited

MODE = MEMORY TRANSMISSION START=AUG-19 10:00 END=AUG-19 10:04

FILE NO.= 114

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004	OK		914032505330	002/002	00:00'39"

-DELOITTE & TOUCHE INC. -

********** - - ***** - 416 601 6292- *********

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Deloitte & Touche

To:	Fax No:
Chief Jack Caesar	(867) 969-2405
Cc:	
Leslie Gomm – DIAND Environment	(867) 667-3216
Anne Rheault – SNC Kaska	(416) 231-5356
Steve Morison – Gartner Lee	(403) 250-5330
From:	**Date:**
Shannon Glenn	August 19, 2002
Number of Pages (including cover sheet):	**To confirm receipt, or if you do not receive all pages, please call:**
2	(416) 601 6150 x2049

Comments:

RE: ANVIL RANGE MINING CORPORATION

Please find attached a revised letter which clarifies the purpose of the Open House in Faro, and which replaces the letter that was faxed to you on Friday, August 16th.

Deloitte Touche Tohmatsu

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Deloitte & Touche

August 19, 2002

Chief Jack Caesar
Ross River Dena Council
General Delivery
Ross River, Yukon
Y0B 1S0

Dear Chief Caesar:

In reference to our letter to you, dated August 6 2002, please note that the date for the public meeting in Faro has been changed. It is now being held **Friday August 23, 2002 between 5:00 pm and 7:00 pm. at the Sportsman's Lounge**. As well, we will be holding a separate **"Open House" on Thursday August 22, 2002 from 5:00 pm to 7:00 pm in Faro at the Anvil Range Mining Guest House** to discuss the Lowering the Fresh Water Supply Dam project planned for this Fall.

We have just learned that Jason Acklack cannot attend the RERC meeting in Whitehorse on Wednesday August 21. We wanted to ensure that you, members of the council as well as Jason, are invited and welcomed to attend both of these public meetings.

In addition, we would like to extend again an offer to meet with you for a general update, on Friday August 23. We would be available from 9:00 am to 2:30 pm. If you are interested in a meeting, we would be happy to travel to Ross River. If this proposed time does not suit your schedule, then we would look forward to seeing you at our next visit on October 10.

Sincerely,

for Shannon Glenn
Manager, Environment Health and Safety

c: Valerie Chort, Deloitte & Touche
Wes Treleaven, Deloitte & Touche
Leslie Gomm, DIAND Environment Directorate
Anne Rheault, SNC-Kaska
Steve Morison, Gartner Lee Limited

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Fax

Deloitte & Touche

To:	Office/Company:
Leslie Gomm	DIAND Environment Directorate
Fax No:	
867-667-3216	
From:	**Date:**
Shannon Glenn	September 11, 2002
Number of Pages (including cover sheet):	**To confirm receipt, or if you do not receive all pages, please call:**
5	(416) 601 6454

Comments:

Leslie,

Further to our conversation earlier today, please find attached a copy of the letter to the Chief, which Wes just sent out. Please apologize the oversight of not having officially cc'd you, as relates to the CEAA process.

Best regards, Shannon

S.

Deloitte Touche Tohmatsu

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Fax

Deloitte & Touche

To:	Office/Company:
Chief Jack Caesar - Ross River Dena Council	(867) 969-2405
cc:	
Derek Ground	(416) 604-3596
Ken Kraft, Heenan Blaikie	(416) 360-8425
Robert Lauer, DIAND	(819) 953-9066
From:	Date:
Wes Treleaven	September 11, 2002
Number of Pages (including cover sheet):	To confirm receipt, or if you do not receive all pages, please call:
4	(416) 601 6150 x2049

Comments:

RE: ANVIL RANGE MINING CORPORATION

Please see the attached letter.

Deloitte Touche Tohmatsu

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Wes A. Treleaven, CA, CIRP

Direct: (416) 601-4482
Email: wtreleaven@deloitte.ca

Deloitte & Touche

September 10, 2002

Chief Jack Caesar
Ross River Dena Council
Ross River, Yukon
YOB 1S0

Dear Chief Caesar:

RE: ANVIL RANGE MINING CORPORATION

Today, I spoke to Derek Ground regarding your funding request letter of August 2nd and our response thereto. I'm writing to you regarding this matter and have copied Mr. Ground.

Following the meeting, which I attended in Ross River on May 24th with yourself, Mr. Allan Edzerza representing the Kaska Nation, Ms. Ann Rheault of SNC Lavalin and several other members of the Ross River Dena Council, I wrote to DIAND and summarized the key points of discussion. At that time, I advised that Ross River had requested that funding be provided for their technical advisors and for the Ross River Dena Council so that they could become actively involved in the process.

Following the TAC meeting held in Faro, Yukon on July 17th, I again discussed Ross River's funding issues with DIAND representatives. They are aware and sensitive to the needs and provided positive indications that this matter was being seriously considered.

On the afternoon of Friday August 2nd, my office received your faxed letter requesting specific funding as set out on a schedule attached thereto. Unfortunately, I did not see this fax and was away from my office until August 27th. During the week of August 19th, I was in the Yukon attending meetings in Whitehorse and Faro and became aware of the letter during meetings with representatives of DIAND. They advised that they were seriously considering the request as submitted.

Following my return, I have had ongoing discussions with DIAND, Ottawa. We recognize the need to have the community of Ross River prepared for the public meeting to be held in Ross River on October 10th. I am pleased to advise that I have received DIAND's concurrence to make a level of funding available to ensure Ross River's participation in the CEAA review of the water licence application process, which includes the October 10th public meeting.

There are however certain conditions which need to be addressed. The proposed work plan and fees, as set out for the technical and non-technical reviews, is to prepare for the public meeting, which will be held on October 10th. There will be further meetings resulting from the application, which will be filed next

year with the Yukon Water Board. We wish to settle on a one time funding request, which will cover the entire process for seeking a new water licence.

As discussed at the TAC meeting, the current water licences will expire on December 31, 2003. The essence of the Project Description as submitted is to:

1. Continue the current care and maintenance programs at the mine site to protect the environment.

2. Complete and oversee any required emergency reclamation work.

3. Complete certain projects which will be in harmony with the long term closure plans that will be developed and

4. File by 2006 a Final Closure and Reclamation Plan.

Ross River's active involvement in a reconstituted TAC committee and support funding for their ongoing involvement on the committee is separate from the application for renewal of the water licenses noted above. It is however, top of mind, and is being pursued by us in ongoing discussions with DIAND.

Recognizing that time is a factor, we believe that we can settle the funding issue for the water licence process quickly. We require a full description of the technical review to be completed, by whom and the estimated hours and hourly rate of the technical advisor to be hired by Ross River. We request that you provide us with the total estimated technical fee and work plan so that payments can be made by us based on submitted invoices and appropriate support.

We will require additional support for the non-technical review and again, each invoice to be submitted to us must set out details of what has been done in line with the proposed work plan.

You should understand that once we have received the CEAA guidelines, we will be submitting an Environmental Assessment Report, which we believe Ross River will ask its technical advisor to review and comment on. Once this has been filed, we anticipate being in a position to file our application to the Yukon Water Board. We believe that once the initial technical and non-technical reviews have been completed, that there should not be a need for further detailed analysis, only time involvement for proper representation at community and Water Board meetings.

With regards to proposed legal fees, we have not received approval for the amount as requested. DIAND is prepared to accommodate a lesser amount for legal fees for the entire process and we wish to discuss this with Mr. Ground as soon as possible.

It is our understanding that many parties have completed their review of the Project Description and have submitted their comments to DIAND Environment Directorate. It is our understanding that Ross River will not submit any comments until after the October 10th meeting. It is our desire to ensure that this meeting is as productive as possible to ensure that there is no further delay within the process. Therefore, we request that you provide to us, as quickly as possible, the proposed fees for the water licence application process and we will immediately respond to your request.

It is our desire not to complicate matters, but to ensure that there is a clear understanding between Ross River, DIAND and the Interim Receiver as to what is to be accomplished and what is to be paid for.

We look forward to further discussions this week, and hopefully work can immediately start to ensure adequate preparation for the October meeting.

Yours very truly,
DELOITTE & TOUCHE INC.
In its capacity as Interim Receiver of
ANVIL RANGE MINING CORP.

Per:

Wes A. Treleaven, CA, CIRP
Senior Vice-President

c: Derek Ground, fax: (416) 604-3596
Ken Kraft, Heenan Blaikie, fax: (416) 360-8425
Robert Lauer, DIAND, fax: (819) 953-9066

SNC·LAVALIN
Engineers & Constructors

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ENGINEERS & CONSTRUCTORS INC.
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Telephone: (416) 252-5311
Fax: (416) 231-5356

September 19, 2002

Deloitte & Touche Inc.
In its capacity as Interim Receiver of
Anvil Range Mining Corp.
Suite 1900
79 Wellington Street West
Toronto, ON M5K 1B9

Attention: Wes A. Treleavan, CA, CIRP
Senior Vice-President

Reference: Ross River Dena Council
Technical Review Funding Request

Dear Mr. Treleavan:

We refer to your correspondence to Chief Jack Caesar of September 10th, 2002 and provide the following details on the proposal to conduct a review of the Water License application for the Faro Mine, on behalf of the Ross River Dena Council.

Description of Work

The scope of work provided earlier seems fairly straightforward. A review of the Project Description (Vol.1) and environmental baseline (Vol. 2) will be conducted by analysts in the field of hydrogeology (Helen Jackson, P. Geo.), surface water (Mart Lupp, P. Eng.), mine closure and dam design/operation (Bing Wang, P. Eng.) and environmental impact assessment and permitting (S. Lindley, RPP). Technical memoranda will be prepared by each analyst, to be incorporated into an overall review document. The scope of this analysis will be limited to key issues and observations. This material will be reviewed with leadership of the Ross River Dena Council (RRDC). An information package will be developed from the SNC-Lavalin and RRDC reviews, the purpose of which is to inform Ross River and Kaska Nation members of the results of the review. The package will be written in language which is understandable to lay persons. A senior representative of the SNC-Lavalin review team will travel to Ross River in advance of the Ross River community meeting for the purpose of presenting results of the review and to attending and observe the community meeting.

Team Members

All members of the proposed SNC-Lavalin review team are senior analysts with extensive experience with mining activities. In addition to technical expertise in environmental impact assessment, Mr. Lindley, Director of Environment for SNC-Lavalin Engineers and

Constructors Inc., also has extensive experience in conducting projects on behalf of First Nation communities, in remote locations. Mssrs. Lindley and Wang have both visited the Faro mine site and the Ross River community. Resumes for our key analysts have been forwarded to you by email.

Cost

Cost to complete this work is as follows:

- 4 analysts at 1.5 days each ($1,000 per day per person) = $6,000
- 2 days in Ross River @ $1,000 per day = $2,000
- 2 days to develop the community materials package @ $1,000 per day = $2,000
- travel costs to Ross River return = $5,000

Total cost = $15,000

Invoicing

For such a small project, it is suggested that we work on a lump sum basis. It is suggested we bill in two invoices - 50% at project outset and 50% following Ross River community meeting. Invoicing will be to Deloitte & Touche.

Yours truly,
SNC-LAVALIN Engineers & Constructors Inc.

Ann M. Rheault
Vice-President
Aboriginal and Northern Affairs

cc: Chief Jack Caesar, Ross River Dena Council
Stephen Lindley, SLEC

Treleaven, Wesley (CA - Toronto)

From: Rheault, Ann [Ann.Rheault@snclavalin.com]
Sent: Thursday, September 19, 2002 10:59 AM
To: Treleaven, Wesley (CA - Toronto)
Cc: Lindley, Stephen
Subject: Attachments to Correspondence Sent Concurrently

Lindley.Stephen.GenEng.doc

LUPP-M.DOC

BWang.doc

Jackson-j.doc

Please find attached the resumes referred to in the concurrently faxed letter concerning the Technical Review Funding Request. If you have any questions, please contact me via email or cell phone: 416-579-4968. We await your response to that we can initiate the work.

A similar outline of the Non-Technical Review will be completed later today : consultation with Ross River Dena Council and forwarded immediately upon finalization.

<<Lindley.Stephen.GenEng.doc>> <<LUPP-M.DOC>> <<BWang.doc>> <<Jackson-j.doc>>

Ann M. Rheault
Vice-President, Aboriginal and Northern Affairs
SNC-Lavalin Inc.
Phone: cell - 416-579-4968
office - 416-252-5315 ext. 5740

Land Claims Department
Ross River Dena Council
General Delivery
Ross River, Yukon

Phone: 867- 969- 2832
Fax: 867- 969-2525

FACSIMILE TRANSMITTAL SHEET

TO: Wes Treleaven	FROM: Jason Ackhack
COMPANY: Deloitte Touche	DATE: 21/Nov/02
FAX NUMBER: 416-601-6151	TOTAL NO OF PAGES INCLUDING COVER: 28
PHONE NUMBER:	SENDER'S REFERENCE NUMBER: [Click here and type reference number]
RE.	YOUR REFERENCE NUMBER: [Click here and type reference number]

☐ URGENT ☐ FOR REVIEW ☐ PLEASE COMMENT ☐ PLEASE REPLY ☐ PLEASE RECYCLE

NOTES/COMMENTS:

[CLICK HERE AND TYPE RETURN ADDRESS]

Ross River Dena Council

ROSS RIVER, YUKON
Y0B 1S0

PHONE 969-2278

Leslie Gomm
Manager
Project Assessment
Northern Affairs Program
345-300 Main Street
Whitehorse, YT Y1A 2B5

NOV, @ 20, 2002

Dear Sirs/Mesdames:

Re: Deloitte & Touche, in its capacity as Interim Receiver of Anvil Range Mining Corporation - Environmental Assessment related to the Renewal of the Mine Site Water License

Thank you for taking the time to travel to Ross River on October 10, 2002 to meet with Chief and Council and our advisors.

In our meeting you invited us to submit our comments on the Project Description and other matters that we want to have included in the Guidelines to be issued to Deloitte and Touche for the preparation of its environmental assessment report under CEAA.

The purpose of this letter and the enclosed comments is to respond to your invitation.

As you know, the members of the Ross River Dena Council are Kaska. The Kaska people have unsurrendered aboriginal rights, titles and interests in and to the Kaska traditional territory. The Kaska traditional territory includes the land on which the Faro mine is located.

The Kaska Dena Council and the Liard First Nation also represent Kaska people with aboriginal rights, titles and interests in and to the Faro mine lands. I wish to make it clear that this letter is not written on behalf of Liard First Nation or Kaska Dena Council. You are encouraged to contact them directly.

In our October 10th meeting you stressed that the scope of the environmental assessment process was limited under CEAA and that there may be issues that this process could not address. Accordingly, we limited our discussions on October 10th.

However, there are issues related to the water license that are beyond the scope of a CEAA environmental assessment. As part of his constitutional obligations to Ross River Dena Council and its members, we expect that the Minister Nault and Deloitte & Touche will engage in

meaningful consultations with Ross River Dena members in order to substantially address the concerns and issues which are beyond the scope of the CEAA process. This letter confirms that we are prepared to establish an agenda and process for consultation with Canada and with Deloitte & Touche to expedite the resolution of these other issues. We invite DIAND and Deloitte & Touche to contact us without delay in order to begin this work. Again we are not speaking for Kaska Dena Council or Liard First Nation.

Our comments related to the environmental assessment guidelines are enclosed. We confirm your commitment to circulate the draft guidelines and consult with us on them before they are finalized.

As you know, the community meeting planned for October was cancelled out of respect. This letter and the enclosed comments were prepared without the benefit of the input from a community meeting. Therefore, we reserve the right to forward additional concerns that may arise from a rescheduled meeting.

We look forward to receiving a copy of the completed environmental assessment report and water license application in due course.

Yours truly, Jack Caesar

Chief Jack Caesar
Ross River Dena Council

cc. Chief Daniel Morris, Liard First Nation
Dave Porter, Chairperson, Kaska Dena council
Chief Lucy McGinty, Selkirk First Nation
Honourable Robert Nault
Premier Pat Duncan
Robert Laurer, DIAND
Wes Treleaven, Deloitte & Touche
Rod Snow, Davis & Company
Ann M. Rheault, Kaska/SNC Lavalin Inc.

Non-Technical Review of Project Description and Project Description Supplement

For the Ross River Dena Council; October, 2002

Project Description

p.1

"DIAND is the exclusive funder of the site ..."

DIAND should not only fund studies, but take fiduciary obligation towards FN people (a meaningful consultation process including FN involvement IR studies, giving FN a real chance to participate in jobs, training and business opportunities, financing studies as outlined by FN to close existing knowledge gaps). The fiduciary obligation is the cornerstone of our relationship with DIAND, and is the highest obligation known in the law. The honour of the Crown is engaged here.

p.1-2

"Activities carried out:

- *As a first priority, to continue to care, maintain and protect the property and the environment*
- *To consult with stakeholders*

Stakeholders vs. parties?, who?, how?, process?, funding? The RRD/KTC are not stakeholders but parties. Stakeholders include land stewards, hunters, gatherers, fishers. The FN is entitled to its own process.

- *To carry out scientific and engineering studies related to the preparation of a final closure plan for the property*

There is a need to integrate traditional knowledge in studies. However, this raises the question about the protection of traditional knowledge. Therefore, a

Traditional Knowledge Protocol has to be prepared. Currently the Kaska Dena are in the process of developing such a protocol. It has to be determined who will be involved.

- *To prepare a final closure reclamation plan"*

Closure vs. reclamation vs. abandonment plan? Just on a general note, what will it be in the end?

p. 2

"The CEAA review is performed ..., and <u>may</u> involve a public consultation process."

Need for a clarification about the role of the RERC. Furthermore, on p.45 Deloitte and Touche states that it "*<u>will</u> involve a public consultation process*". Please clarify.

p.10

"On April 21, 1998, Deloitte and Touche Inc. was appointed Interim Receiver..."

For how much longer will this appointment carry on?

p. 11

"The Anvil Range mine was financially important to the local and Territorial communities. In receivership, it continues to be socially, environmentally and economically important to these groups, as well as a number of others."

To clarify this point from the perspective of the Ross River Dena; the Anvil mine was from its beginning socially and environmentally important to the people. The Ross River Dena did not look for the quick money, but had to suffer the social, environmental and economic (traditional activities diminished in the area due to the mine development) consequences. For 30 years the Ross River Dena tried to "explain" the damage done on these parts of their traditional lands. Clearly, the

mine was not of financial importance to all local communities, but a place which caused from its beginning social, environmental and economic effects.

p.11

Table 1: Anvil Range Stakeholders

Where are the priorities here??? Alphabetical order is not always a mean to create justice.

p.12

"It is the intent of the receivership to restructure the TAC to reflect consultation needs..."

Who will restructure the committee? How will it be restructured? Who will approve it?

P.12

"The Ross River is a First Nations community that has not benefited from the existence of the mine, despite its location on a part of the community's traditional land ... During the Curragh-Anvil Transition, the Ross River people were promised by agreement, educational and land use funding. However, this was never realised in a material way."

And where are the consequences deriving from these statements? Does Deloitte and Touche really think that it is enough to tell about the history and then forget it for the reminder of the document?

There should be a question about how the Ross River Dena can be included more closely regarding job, training and business opportunities, as well as how studies can be carried out in cooperation with the Ross River Dena. Don't repeat the same mistakes over and over again. The way forward is to ensure that an appropriate share of contracts, jobs and training go to the RRD. These important areas of

interest must be safeguarded. Clearly, there has to be a clarification regarding the impacts and benefits for the Ross River Dena and their priority rights to managing the site, as it is an integral part of their traditional territory.

p. 12

"The Interim Receiver consults directly with its stakeholders, including the town of Faro and the Ross River community."

How does the consultation protocol look like? Does one exist? Does it take into account cultural differences, such as manners? Does it account for 30 years of neglect of what the Ross River Dena had to offer regarding the management of the mine site?

p.13

"On a project-by project basis, Environment Canada..., the Department of Fisheries and Ocean ... and YTG have and will be consulted."

The Ross River Dena/Kaska Tribal Council is an equal party to the above named regarding the management of the mine.

p.15

"Information regarding wildlife use of the mine area prior to mine development is anecdotal and largely available in a retrospective study of traditional use of the area by the Ross River Dena."

The word anecdotal distorts what traditional knowledge represents and incorporates– the knowledge of generations of First Nation peoples collected and adapted through the steady use of an area. The word anecdotal (subjective, unreliable, unbelievable) is not only incorrect, but also insensitive. Traditional knowledge, as it has been used in many studies for the Ross River Dena especially in the area of wildlife management, has even been recognised as legitimate source of information by Supreme Court decisions (i.e. Delgamuukw).

A further comment raised by committee members is that the studies of traditional use in the Ross River Dena are not retrospective, but rather put knowledge into perspective.

The following list of wildlife encounters is non-understandable. When using traditional knowledge, it is important to recognise where the knowledge comes from. We would like to know from there this info has been taken. What is the source??? Please clarify.

p.16-17

Aquatic Resources

The non-technical review group is not convinced that enough studies have been undertaken to understand sufficiently fish populations and fish health. As fish is one staple of First Nations in Ross River as also down stream, the non-technical review group would like to see studies which close existing gaps (*"The Rose creek diversion channel ... may pose barrier..."*) and which include a broader range of species (especially salmon species).

p.17

"Current groundwater quality monitoring results indicate that oxidation products ...are entering the sand and gravel aquifer underlying the tailings deposit but that these products are not observed in significant concentrations downgrading where they might impact surface water quality."

Further studies need to be undertaken, including covering a greater region for the study to ensure where the oxidations products are going.

p.27

"A study of traditional use and heritage resources of the Faro and Anvil Range areas was not conducted prior to mine development in 1968/69. A review of traditional use and heritage/archaeological resources was completed as part of an Environmental Site Assessment conducted in 1999 by Gartner Lee Limited. It was based on data from 1992 retrospective impact assessment and interviews conducted with members of the Ross River Dena community."

There are different questions and concerns regarding the above sections.

1. The study undertaken by Gartner Lee Limited is not comprehensive. As stated by Gartner Lee Ltd. the section on "Traditional Use and Heritage/Archaeological Resources" was only a small component of a broader study and presented only a general preliminary assessment. How can this study be the base for the project description?
2. Why where the findings and recommendations of the studies not outlined in this section, for example the following recommendation:

"Given that the Faro area was not checked for [heritage] sites prior to development, it is recommended that post-development heritage impact assessment be undertaken, to document existing sites before they suffer further damage through such things as artefact collecting and erosion."

p.27

"The key resources that drew the Ross River people to the Anvil Range Area included salmon, sheep, caribou, moose and fur-bearers."

The people were not drawn to the Anvil Range Area, but to Mount Mye (Names are important as they claim areas. This area is claimed for generations by the Ross River Dena.), also called the Mountain of Everything. Everything did not only include the items listed above, but also medicine, water, all kind of berries and different materials, as well as for spiritual and cultural purposes.

"Six sites within the Anvil Range area are registered in the Yukon Historic Sites Inventory database."

We would like to inform the receiver that there are great concerns that the gravesite, located at the mine site, has been damaged through road construction. Unfortunately, there have never been enough financial resources to address these concerns. Effort should be taken to investigate this matter. Furthermore, studies should be undertaken to investigate outstanding sites, which have not been identified to this point in time.

For further studies in the area, it is necessary to develop Terms of References to ensure quality research which honours traditional knowledge and wisdom, and fits the needs of scientific research.

p.29

"This work will be completed during the summer of 2002 and once completed the Interim Receivership intends to close the sale to 32081 Yukon Ltd., a company that MacMillan Mining Contractors controls."

Has this been done, and who is MacMillan Mining Contractors Ltd.?

p. 31

"To date, stakeholder relations, other than regulatory authorities (e.g., town of Faro, First Nations, etc.) have been intermittent consisting of meetings, telephone and written communications."

The question is if this communication was successful. To be successful, it does not only the attempt from one side, but also an understanding and appreciation for the other's cultural difference and limited financial and human capacities. A start

would be to build-up a communication protocol (outlining schedule requirements, continuity etc.) to which both sides can agree, and which both sides will honour.

p.31

"Communication with DIAND, both in Ottawa and in Whitehorse is frequent and comprehensive."

The Ross River Dena wished that this could be said about their communication experience with the Interim Receiver.

p.33

"During its involvement with Anvil Range, the Interim Receiver has attempted to minimise this impact by positively influencing the local economy in a variety of ways. These include:

- *Full-time employment for local individuals as site management personnel;*
- *Full-time hourly employment for two local individuals, seasonal employment (March-October) for over 30 individuals, as well as a number of summer students as required;*
- *Procurement of consulting services from a numb er of Yukon-based firms;*
- *Seasonal employment of local resources for construction and maintenance work as required;*
- *Local procurement of supplies where possible; and*
- *Purchase of electricity from Yukon Electric Power*

In addition, the Interim Receiver has assisted in the implementation of training programs for members of local communities."

We would like to know if Deloitte and Touche follow the procuring policies of the federal government regarding preferential business opportunities for First Nations and Northerners. If not, why not? RRDC directed their lawyer to ask this question in writing, and on 9 August, 2002, a letter concerning this matter was

sent to DIAND and the IR. As of time of writing, RRDC has received no response.

p.34

"It was recognised by all stakeholders, however, that a proactive, longer-term perspective was essential in managing environmental issues in a fiscally responsible manner. This would involve identifying and addressing issues that may not present an intermediate concern with respect to non-compliance but have potential to develop into large-scale, expensive problems if left unaddressed. For the Anvil Range property, these issues generally revolve around groundwater contamination and the long-term management of dams, diversions and tailing."

This statement should not only address environmental issues, or even more restricted groundwater contamination. For example, social and economic issues are also of importance (as outlined by Deloitte and Touche earlier in the paper).

Furthermore, from en environmental (and also social and economic point of view) the Ross River Dena requested for years now to fence the tailing ponds to avoid animal traffic through it. On visits, moose have been seen in the tailing ponds (some people from Ottawa were really excited about it, whereas representatives of the Ross River Dena were very much concerned) and tracks can be found frequently.

The Ross River Dena are pleased that Deloitte and Touche finally understands that it is important to plan for the future. Hopefully Deloitte and Touche will also understand over time that the mine produces not only groundwater contamination, but that other issues are at stake.

p.42

"Eric need to add a comment as to why."

Who is he and has he added the comment?

p.44

"Activities to be carried out during the 2004-2008 timeframe will include:..."

The renewable resource component is missing in the listed items.

p.45

"The CEAA review is performed ..., and will involve a public consultation process."

See comments above.

p.46

"The routine care and maintenance activities that are planned to be undertaken ..."

Why must we still hold on to maintaining and caring an environmental time bomb? Let's close it up.

p. 54

"The biological monitoring program will be conducted according to the Water Licence. This currently provides for monitoring of benthic invertebrate populations at various locations in Rose and Vangorda creeks every second year."

The biological component monitored must include more then only "*benthic invertebrate populations*". As outlined earlier by Deloitte and Touche, the Ross River Dena are relying on much more than fish.

p.55

Site Security and Access

There has to be access for Ross River Dena/ Kaska Dena to their traditional resources. The mine site cannot just be closed up. Please address this issue.

p.56

Remove Salvage and Scrap

Include the Ross River Dena - Business Opportunities

p.57

Remove unnecessary major buildings

Include the Ross River Dena - Business Opportunities

p.58

2.2.1 Proposed Stakeholder Consultation Plan

"The list of key stakeholders will be reviewed and a communication and consultation plan devised. This plan will include attendee lists, minutes and note of all communication events, as well as an annual report to all stakeholders providing a summary of key findings and appended attendee list and meeting notes. The consultation plan will be reviewed annually and revised where necessary."

We would like to gain a clear understanding of this consultation plan. Who will determine how it will look like? Who will pay for all this involvement? How will it be structured?

p.65

"The terms of reference for socio-economic studies will be prepared and will include an overview of current socio-economic conditions and assessment of effects of proposed closure measures. A contractor will carry out socio-economic studies and prepare a report for attachment to final closure and reclamation plan.

...

DIAND is the exclusive funder of the site to the Interim Receiver. Due to the funding arrangement, DIAND is also proponent on this project. Therefore, the ability of the Interim Receiver to carry out the studies described herein will be impacted by DIAND's ability to continue funding to this project."

What do these terms of reference look like? Please clarify, if the study will be undertaken, and who will carry it out? How will knowledge gaps be filled? Does DIAND still consider itself to be a proponent?

Project Description Supplement

p.1

"Specifically, it is the understanding of the Interim Receiver that additional information is being requested regarding:

- *accountability...*
- *a clarification of the extent to which existing information and closure studies will be used...*
- *Timelines and interlinkages of closure studies."*

These issues do not reflect the concerns of the Ross River Dena Council as they were outlined at the TAC meeting in July, 2002 in Faro. Please Clarify.

p.3

"With regard to continuity, the Interim Receiver will ensure that its consulting team has continuity with the engineering and environmental teams that have worked on the site in previous years and maximises the use of local expertise."

How is continuity for other parties involved in managing the Faro mine be granted? Furthermore, what are you referring to when saying "*local expertise*"?

p.3

"With respect to the short-term risks which need addressing in a given year, the Interim Receiver consults with DIAND as well as with other regulators and advisory groups as required. "

Who are these regulators and advisory groups?

p.4

Consultation structure for closure planning is currently developed

By whom is it developed?

p.4

"The outcome of these discussions as well as consultations with First Nations identified in the DTA will help identifying mechanisms for First Nations, stakeholders and public involvement in the development and implementation of a FCRP for the Faro mine."

Please clarify.

p.5

"The following paragraphs provide additional information regarding these scientific advances, knowledge gaps, and changed assumptions and indicated that the feasibility and technical merit of some closure measures should be re-evaluated prior to implementation of any closure plan."

- What are those gaps? How does Deloitte and Touche find the gaps?

Proposed EAR Guidelines

As a result of the above raised issues, the Ross River Dena and Kaska Tribal Council (RRD/KTC) propose the following points being included into the EAR Guidelines for the Faro Mine Water License in order to achieve environmentally conscious decision-making:

- First and most important of all, the Final Closure and Reclamation Plan (FCRP) must be developed in close cooperation with the Ross River Dena, as they are the people who live and use the area. The end-product (closed mine) must not be determined by the amount of money spent, but must incorporate the needs of the people who stay to use the area for the next generations.

- As a result, there has to be a reconsideration of what kinds of studies are needed. Not the studies should necessarily determine the end product, but the Ross River Dena should be consulted to what their needs and views for the Faro Mine are.

- There has to be a strong emphasis on including the RRD/KTC in the studies concluded. Terms of References must be developed which account for Kaska values (e. g. RESPECT for land and people)

- Traditional knowledge (TK) is viable and needed in order to receive long-term solutions to the current problems. When using TK, a protocol (Traditional Knowledge Protocol) has to be followed to insure that it is used correctly, and the property of the knowledge is protected for the RRD/KTC.

- Ways have to be developed to merge TK and scientific knowledge in a meaningful way.

- There is a need to evaluate cumulative impacts as well as acknowledge the complexity of the environment.

- A liaison position must be created for the RRD within Deloitte and Touche to ensure the flow of information and to build a closer and more efficient working relations. Furthermore, this allows Deloitte and Touche to learn about the perceptions and views of the Ross River Dena (e.g. facilitating cross-cultural training for Deloitte and Touche managers).

- There has to be a reconsideration of the structure and purpose of the Technical Advisory Committee (TAC) for the Faro Mine and the Regional Review Committee (RERC) to allow for an incorporation of RRD/KTC values and views to projects which affect them.

- DIAND, as the sole funder of the Faro Mine, has to provide continuous and sufficient funding to allow for a meaningful participation of the RRD/KTC in completing the study gap in the management and work at the Faro mine site.

- D&T must adapt procurement policies regarding preferential business opportunities for First Nations and Northerners.

- An Impact and Benefits Agreement must be negotiated between the governments and the RRD/KTC to demonstrate their commitment to provide employment, training and business opportunities to the First Nations of the area.

- Clearly outline the next steps regarding the water license application, the development of the abandonment plan, and the closure of the mine itself.

KEY ISSUES

1. How does the community know that they will do what they say will be done? e.g. reporting, communications, funding for technical support. Is annual reporting the only time the communities will be advised of progress?

2. Who is ultimately responsible for the site and any problems that might occur (e.g. spills, dam break, flooding, fish kill, treatment failure), during the site management period (2003 to 2008)? Who is the liable party?

3. Who is responsible for stopping the impacts and cleaning up the site? Why is it going to take 3 years to do a closure plan?

4. We would like to review a detailed operating/management plan for this facility for the next 5 years.

5. We expect the detailed license application to provide specifics e.g. volumes, definition of seasons, locations, spill contingencies, operating parameters, design criteria and drawings, sludge management plan, consultation plan, etc.

6. What process will be followed to allow RRDC to make any alterations (e.g. general operating parameters; soils excavation; treatment processes, repairs/replacements to conveyance channels or treatment plant(s), etc.); to the license during the site management period (2003 to 2008)? Does DIAND anticipate that changes to the license could trigger CEAA?

7. Will an EIA of the proposed operating plan for the license be done? If so, by who and under what process? If not, how will we know that the proposed operating activities will not cause additional impacts to the area?

8. What commitment is there that there will be money to clean up the site? How do we know the money will be there when it is needed (i.e. for the entire period of closure/rehabilitation)? Given the current annual cost of care and maintenance, why take 3 years to complete a closure plan when the money could be better used to clean the site up?

9. The scope and extent for preparation of the closure plan (i.e. detailed Terms of Reference) should be included as part of the water license application and should include consultation process, scope of EIA, alternatives analysis, testing, source of materials, responsibilities and financial commitments, regulatory framework (including expected applicability of CEAA) and proposed CEAA process if considered applicable.

10. The volume of water taking in the current license (42,900 m^3 per day) is quite large. Will the license be changed to reduce the amount of water required during the site management period (2003 to 2008)? A rationale for water requirements during the site management period should be provided with the license application, including all applicable water balance calculations.

11. The discharge criteria in the current license do not seem to apply to the groundwater under the wasterock dumps. Will the definition of waste discharge be changed to include these aquifers? Also, we expect the license application will provide a location where discharge criteria must be met for the different aquifers.

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MEMORANDUM

TO:	V. Mitander,	**Date:**	07 November 2002
	Ross River Dena Council		
Copy:	A. Rheault		
	R. Snow		
FROM:	Steve Lindley	**Ref.:**	833243
Subject:	Review of Anvil Range Mining Corporation – Interim Receivership Project Description		

In accordance with the Terms of a proposal submitted to the Department of Indian Affairs in August, 2002 and clarified on 19 September, 2002, a limited review of the *Anvil Range Mining Corporation – Interim Receivership Project Description* document (Deloitte & Touche, May 2002), was conducted by SNC-Lavalin Engineers and Constructors Inc. focusing on the technical, process and regulatory issues of the two volume Project Description document, to complement the non-technical review being prepared by the Ross River Dena Council.

Our review has been organized into two categories:

A. Process and Regulatory Issues
   - Environmental assessment principles
   - Water Licence requirements
   - Site Closure and rehabilitation planning

B. Technical Issues
   - Hydrogeological issues
   - Water quality issues
   - Other engineering issues

A summary of the results of the SEL&C review are provided in the following document.

Background

The Project Description document, prepared in May 2002 by Deloitte & Touche, the Interim Receiver of the Anvil Range properties, is a summary document, the stated purpose of which is to initiate the *Canadian Environmental Assessment Act* (CEAA) review process for an application to amend/extend existing water licenses for the Vangorda Plateau mine site (IN89-002) and the Faro Mine Site (QZ95-003), issued pursuant to the *Yukon Waters Act* (formerly the *Inland Waters Act*) in 1989 and 1989, respectively. Both licences legally expire on December 31, 2003. The Faro license expiry date was set conditionally upon completion of a (presumably CEAA) trigger for review of a mine closure plan prior to that date.

These properties, located near the community of Ross River (in part) within the traditional territory of the Ross River Dena Council in the Yukon Territory, were formally utilized by

Curraugh Resources and (subsequently) the Anvil Range Mining Corporation for lead and zinc extraction and processing. Mining and metal processing activities were ceased at both facilities in 1997-98 shortly after the Anvil Range Mining Corporation filed for creditor protection under the *Companies' Creditors Arrangement Act.* The Ontario Court (General Division) appointed Deloitte & Touche as Interim Receiver in April 1998. The Department of Indian Affairs and Northern Development (DIAND) assumed the responsibility to provide most of the financial resources required to fund on-going activities at the site under the management of the IR.

The principal role of the Interim Receiver (IR) is twofold:

1) To manage the properties in accordance with the water licenses, providing on-going care, maintenance and environmental protection activities; and
2) To *"apply for any permits, licenses, approvals or permissions on behalf of [Anvil Range] as may be required by any government or regulatory authority."*

The IR commissioned an economic study to assess the value of the properties and the "status of the mining industry in general". Based on the findings of the Strathcona Report, discussions with various stakeholders, including the Ross River Nation and creditors, and various court hearings, it has been collectively agreed that that there is little remaining economic value in the properties as mining facilities. Notwithstanding any remaining financial obligations to creditors, it is recognized that the principal objective of the IR and all stakeholders, is to close and rehabilitate the facility in a socially and environmentally responsible manner, consistent with all applicable legislation and the objectives of affected parties, communities and government agencies. The IR states that the longer mine closure activities are delayed, the "greater the costs and risks to the environment".

Recognizing the time required to prepare a comprehensive and credible mine closure strategy/plan for these complex properties, including the compilation of reliable technical information, the IR aims to conduct all necessary studies and prepare a Closure Plan document for submission in 2006. They have estimated that a three-year period is necessary for public and government agency review, and agency approval of the Plan before it can be implemented in 2009. Based on these estimated timelines, the IR intends to apply to the Yukon Water Board for a single (combined) water license to cover all operating and management aspects of both the Faro and Vangorda Plateau facilities in the intervening timeframe between expiry of the existing licenses (say 2004) and obtaining a license specific to closure activities (in 2009).

The purpose of this review is to ensure, on behalf of the Ross River Dena Council, that the applications prepared by the IR are technically sound and meet the general objectives of the Ross River community. Their objectives are focused on equitable and representative participation in all decision-making processes affecting the properties; enhancement of environmental quality, including the protection/enhancement of natural resources which are central to the culture and economic well being of the community; and maximization of social and economic benefits (such as training, employment and contracts to provide goods and services), that are/will be made available during on-going management of the properties, as well as during implementation of closure activities.

As stated in the Project Description document, *"Ross River is a First Nations community that has not benefited from the existence of the mine, despite its location on a part of the community's traditional land."* Based on a review of available documents and discussions with

community members, it appears that the development and abandonment of these properties has caused significant environmental, social and economic impacts to the Ross River community. The water license application and closure plan processes must ensure that these impacts are immediately minimized and ultimately discontinued.

From the perspective of the Dena Council, the water licence applications to be submitted in 2003 are integral to the mine closure process which must facilitate responsible rehabilitation of the Faro and Vangorda properties and remediation of the environment that has been affected for years.

A. Regulatory Framework for Site Management and Closure/Rehabilitation

A.1 Disentangelment of Planning/Regulatory Processes

The IR identifies two key processes that must be followed in obtaining water license extensions:

1. A review process under CEAA which is required in part, due to the disbursement of federal funds, and

2. An application to the Yukon Territory Water Board for a new license once the CEAA process is complete.

The overlap of the various regulatory processes is confusing. In our opinion there are a number of regulatory planning processes that must be followed to accomplish implementation of a closure/rehabilitation plan for the Faro mine, recognizing that site operations and management must be on-going during the closure planning and implementation process, namely:

1) Water license application process for the operational period
2) CEAA process for the current water license amendment application
3) Closure Planning process pursuant to the *Yukon Placer Mining Act* and/or other legislation governing the abandonment of mine facilities in the Yukon Territory
4) CEAA process for the mine closure and rehabilitation plan
5) Water license application process for the closure period (following the 2003 to 2008 operational period)
6) CEAA process for the initial closure period water license application (2008 to 2013?)

The process to develop a closure plan for the Faro mine is not well laid out in the document, and the distinctions between the planning process for the water license amendment and closure plan are unclear. It is recognized that the responsibilities of the IR are limited to the operation and maintenance period prescribed by the Court. It is our interpretation that the IR interprets their immediate responsibilities are to obtain an amended water license for the period 2003 to 2008; and to obtain CEAA clearance for the water license amendment for the operating period. However, the IR is also proposing to undertake a closure planning process during the upcoming period of operation and maintenance, and even to implement some physical closure activities during that period. This presents confusion as to the responsibilities of the IR and the timing and logistics of conducting the many regulatory planning processes that are necessary.

At minimum, the IR must clearly outline the anticipated scope of the various processes that must be undertaken to accomplish implementation of a closure plan in order that First Nations and

stakeholders can effectively participate. To assist participants, all statutory guidelines or standards to be followed/met should be clearly referenced. It is anticipated that these processes would include government agency, public and TAC consultation. It is recommended that a detailed Terms of Reference for the site closure and abandonment plan should be required specifically in the amended water license (Part E perhaps), including timelines for completion of the Terms of Reference, the draft document and a deadline for submission of a final closure/rehabilitation plan document to the Board. As long as the processes remain entangled and piecemeal, the RRDC will be forced to provide comments on all aspects of each individual process. This approach would likely add time and cost to a process which all participants are anxious to complete and move towards implementation.

In addition to evaluation of rehabilitation alternatives, technical details of construction and operation during the transition period, the consultation program, and the monitoring program, the site abandonment and closure plan should also provide criteria for defining the conditions under which the operator can abandon the site (and conditions for abandonment), and a commitment to provide financial resources, if necessary, including financial assurance. The Plan should estimate an anticipated period of time for active management/operation during the closure transition stage (i.e., potentially in perpetuity). The approach to ensuring financial assurance for the entire period of closure is a major issue to the First Nations and should be addressed during closure plan development.

A.2 CEAA Triggers

In accordance with requirements of the CEAA Law List regulation, the CEAA process may also be "triggered" by the requirement to obtain certain approvals under federal legislation, principally the *Fisheries Act*. According to the requirements of the *Fisheries Act*, any activity which may cause alteration, disturbance or destruction of fish habitat (HADD), requires an authorization.

It is premature at this stage to determine the potential for requiring *Fisheries Act* authorization for activities planned to be undertaken either during the closure plan study period (2003 to 2009), and/or during the 5 year operation and maintenance period to be covered by the amended water license. However, from review of the Project Description, there are several planned activities which could require *Fisheries Act* authorization during the operation and maintenance period, depending on the nature of specific activities, their location and duration, including:

- Establishment and operation of a solid waste landfill
- Establishment and operation of a bioremediation facility for storage/treatment of hydrocarbon contaminated soils
- Replacement or repairs to various diversion channels
- Re-direction of surface flows and/or alteration in discharge volumes/quality
- Enhancements, expansion or operational alterations to wastewater treatment plant(s)
- Excavation and/or placement of borrow/cover materials for testing Excavation and/or placement of borrow/cover materials for testing

The scope and extent of the CEAA process will depend in large part on the ultimate description of a number of the individual components to be carried out during the operational period of the

water license. Details of these and many other technical components of site management provided in the Project Description are not sufficient to determine the specifics of the proposed activities, the potential significance of environmental effects, or the extent of analysis and mitigation measures proposed or required.

In order for process participants to understand the necessary scope of work for the water license amendment, it is necessary to better understand the potential CEAA implications of these activities.

B. Proposed Changes to be Incorporated into the 2004 to 2008 Water Licence

B.1 Comments on Proposed Changes to Achieve a Combined License

Section 2.3 of the Project Description summarizes the proposed changes to be incorporated into the new water license. It is stated that a detailed condition-by-condition description of proposed changes will be submitted with the application, and that an overview of the each license section is provided, which is taken to refer to section 2.3 of the Project Description. It is inferred from this that those sections not addressed in Section 2.3, are not intended to be changed.

Comments on the proposed changes to the existing Faro mine site water license are as follows:

Part A -- General Conditions

Condition 6 respecting Security. It is noted that the IR will not contribute additional funds to the Trust Reclamation Security Fund. Unfortunately details of the formula established by the Courts for financial contributions to the closure of the site are not known to the Reviewer. However, in general, it would be helpful to stakeholders participating in the water license and closure plan process to have full disclosure of the extent of financial resources that are to be available for on-going management, maintenance and closure of the facility, and/or a commitment from the IR or DIAND that the resources necessary to comply with the full terms of the license and the recommended/approved closure plan will be committed to the site. This is especially important if the IR's statement, "*These funds will continue to be invested until the properties are officially abandoned*", is intended to mean that only those funds currently held in the Fund will be available for closure activities. It is doubtful that $500,000 plus accrued interest will be sufficient to rehabilitate and manage the site for the lengthy period of time necessary to achieve chemical and physical stability, a yardstick used by the Ontario *Mining Act* closure process to define "walk away" conditions.

Condition 8 respecting Non-compliance. It would be helpful to know what term will be proposed in the amended license to replace this condition, which provides for revocation of the license in the event of non-compliance. It is this condition which ensures the public that commitments made (and approved) in the license will be implemented as outlined. Without an equivalent condition in the amended license the public and stakeholders will be uncertain as to the level of commitment being made to manage the site responsibly for the period of time required to achieve "walk away" conditions.

Condition 9 respecting Waste Discharge Standards. It is assumed this condition will be carried over to the amended license.

Conditions 13 through 15 respecting Annual Reporting. It is assumed these conditions (dates revised) will be carried over to the amended license.

Part B – Operating Conditions

Condition 18 respecting Water Taking. It is expected that the 42,9000 m^3 per day approved in the operating license will be significantly reduced in the amended license. The amount of water required to maintain and close the site is expected to be provided in detailed water balances prepared for representative stages of site maintenance and closure.

Condition 19 respecting Water Recycle. It is assumed this condition will be removed from the amended license.

Condition 20 respecting Rose Creek Diversion flows. It is expected this condition will be amended in accordance with the revised water-taking volumes.

Conditions 21 through 25 respecting Waste and Effluent Discharge Quality. It is assumed that conditions 21 through 25 will be carried over to the amended license.

In general, it is agreed that it would be beneficial for the IR to submit a detailed discharge contingency plan and operating plan for the Faro Creek and Faro Pit prior to directing discharges direct to the receiving environment.

Condition 26 respecting Maximum Concentrations It is assumed the prescribed limits will not be relaxed. These license limits expressed as maximum grab sample concentrations are less than the corresponding limits in the new Metal Mining Effluent Regulations (MMER) where the list of parameters overlap. The prescribed maximum grab sample concentration limits in the license are also less than or equal to the MMER composite and monthly arithmetic mean limits.

Conditions 28 through 35 respecting the Tailings Disposal System. It is assumed these conditions will be modified to suit the current application, and that conveyance capacity of the channels will be designed according to hydrologic modeling and water balance calculations conducted by the IR. It is agreed with the Board that a permanent closure plan for this facility be developed as soon as possible.

Conditions 36 through 38 respecting Waste Rock. It is expected that conditions 36 through 38 will be amended to suit the current application and that details of the proposed monitoring program will be outlined.

Condition 39 respecting North Fork Groundwater Contingency Program. It is assumed this condition will be replaced with an amended condition that provides comprehensive procedures and specifications for contingency planning for all aspects of site management during site maintenance (2004 to 2008) and site closure (2009 and beyond), integrated as necessary with procedures and specifications developed for the amended condition 16. The Reviewer agrees with the decision of the Board that it is not sufficient that the trigger for this condition would be "professional, subjective assessment".

Part C – Modification and Construction

Condition 40 respecting submission of designs prior to construction. It is suggested that this condition remain in the amended license and that, as prescribed by the Board, a minimum 90 day period be specified for submission of designs prior to construction. Further, it is suggested that this condition be amended to state that all designs be provided to TAC members and other stakeholders (to be specified by the applicant) concurrent to the Board for review and comment at the initiation of the 90 day review period.

Condition *41 respecting submission of a detailed construction schedule prior to construction.* As required by the Board, it is agreed that a proposed construction schedule be submitted with detailed designs of proposed construction activities (as in condition 40), a minimum 90 days prior to construction, and further, that the condition be amended to state that the schedule, together with design details be provided to TAC members and other stakeholders concurrent to the Board for review and comment at the initiation of the 90 day review period.

Conditions 42 through 44 respecting implementation and reporting of construction activities. It is assumed these conditions will be carried over (amended as necessary) to the amended application.

Condition 45 respecting design criteria for seismic events. It is expected this condition will be amended (as necessary) to meet current criteria of the Canadian Dam Safety Association.

Conditions 46 and 47 respecting the Faro Pit Dam. It is assumed these conditions will not be required in the amended license. It is expected that any construction required at the Faro Pit Dam during site closure will be outlined in the closure plan and addressed in a later amendment to the license.

Condition 48 respecting activities during temporary cessation. It is assumed this condition will not be necessary in the amended license.

Part D – Reports, Sampling and Analysis

Condition 49 respecting monthly maintenance activity reports. It is assumed this condition will be carried forward to the amended license, and that it will be amended to state that monthly reports shall be made available to the TAC and other interested/affected stakeholders and First Nations.

It is agreed that an updated environmental monitoring plan is beneficial, and that a revised monitoring plan developed by the IR, should be submitted with the License amendment application for review by TC members, other stakeholders and government agencies, in accordance with requirements of the Water Board and the *Canadian Environmental Assessment Act*. The TAC, other stakeholders and First Nations look forward to reviewing the contingency plan regarding discharge from the Faro Pit as part of the application for the current license amendment.

Part E – Rehabilitation and Abandonment

This section should dictate the terms of the preparation of a comprehensive and integrated closure and abandonment study for the Faro and Vangorda sites to be reviewed by TAC

The 2002 preliminary contaminant loading study probably provides an indication of contaminant loading in its current state. It is unclear how much predictive power this model has or how the model will be applied during the water license application process. However, we suggest the model would be improved using flow weighted averages rather than simple averages for some load sources. It is also unreasonable to expect 100% correlation between measured and predicted loads when one grab sample is often used to represent 6 months of loading (a single time step in model).
If the model is to be an important supporting element of the design and operations plan for the site, it is suggested it should be refined.

Project Description Volume I; p.8 What "other sources" of contaminated water report to Vangorda pit? In what volume and at what rate?

What are the characteristics and estimated volumes of seepage from the Vangorda pit? What are the characteristics and volumes of seepage from the Seepage from Grum pit?

What is the potential for overtopping of the Grum pit?

What is the condition of the Little Creek Dam (stores runoff from Vangorda waste dump)?

Where does drainage from the Grum ore transfer pad report?

What are the "season" parameters (triggers) for the Faro pit pumping regime? How does IR determine conditions for transition from winter to Spring?

It is good that the IR is recirculating sludge from the clarifier to minimize lime use. Is there no net sludge produced which must be removed from the process? If so, where is this sludge stored?

Project Description Volume I; p.51 – Where does off-spec water from the Vangoorda WTP report? In 2002 the Vangoorda pit reached its maximum design elevation. What are the contingency scenarios for managing extreme conditions in the pit? What if off-spec is added to such an event? What if the diversion fails during high water and off-spec continues to go into pit? Contingency plans for the Vangoorda Pit should be detailed with contingency plans for other facilities in a comprehensive contingency plan document.

An erosion and sediment control plan should be developed, and it would be helpful if a water management plan was developed to help reviewers understand the complexities of water movement, treatment and discharge around the site.

The application for the amended water license must address any changes that might occur to operating conditions during the period that the license is in effect. Otherwise, it is expected that incremental amendments will be required to the license for these types of modifications. A number of options for alternative treatment schemes, etc. are littered throughout the document. Specific details of these programs, or an approach to managing these types of modifications should be included in the license application for review. Examples of the types of operating modifications we refer to include:

members, other stakeholders, First Nations, government agencies and the public, prior to approval, in accordance with the requirements of the Water Board and the *Canadian Environmental Assessment Board.* This section should also outline the process for preparation of the Terms of Reference for the site closure and abandonment study until a detailed Terms of Reference for the Plan has been prepared by the IR and submitted for review by the TAC, other stakeholders, government agencies and the public. Similarly, it is considered premature to prescribe details for sulphate removal technologies outside the context of overall site closure.

B.2 Issues Related to the Vangorda Water License

A number of issues discussed above in the context of the proposed amendments to the Faro site water license are applicable to the Vangorda license. Recognizing that the amended water license is to integrate the two existing licenses, it is considered that the issues discussed in the above section apply to the integrated water license to be developed for the two sites, with the addition of the following comments:

Conditions 4 and 5 respecting groundwater monitoring and fish monitoring. These conditions are appropriate to both sites and should be incorporated as written, into the amended license. It is expected that details of these monitoring plans will be submitted with the application for review by the TAC, First Nations, other stakeholders, government agencies and the general public in accordance with requirements of the Water Board and the *Canadian Environmental Assessment Act.* It is not agreed that groundwater monitoring locations cannot be identified prior to construction and it is expected that a proposed drilling program be included in the detailed monitoring plan to be submitted with the license amendment application.

Proposals to amend specific locations for sampling of any type specified in the previous license are expected to be outlined in the detailed monitoring plan to be submitted with the water license amendment application. These proposals can then be reviewed in the context of the overall plan.

It is agreed that a sludge management plan be developed and submitted with the water license amendment application.

Any changes or proposals related to consultation with the TAC and the public should be provided in a consultation plan covering the entire site maintenance period, to be submitted with the water license amendment application.

C. Technical Issues

C.1 Water Quality

Section 2.1.1.2 pg 47, last paragraph ***"pumping from the pit will be accomplished via an existing barge-mounted pumping system"***

We are concerned about emergency conditions and consequences of pump failure. If additional storage in the pits is not available, contingency pumping schemes must be readily available to prevent overtopping and damage to the downstream environment in the event of failure of the main pump. These contingencies should be described. Also, it is not clear what meterological conditions have been assumed for design purposes. For example, we would like to know what

storm event was considered in designing the operating parameters for the Main Faro Pit to prevent a breach of the Faro Creek diversion.

The consequences of severe meteorological conditions coinciding with a complete failure of the Faro creek diversion channel (collapse of northeast pit wall) should be investigated and reported. We would expect to see details in the documents produced. Contingency measures should also be provided in the event of failure of the wastewater treatment plant.

Section 2.1.14 pg 54, last paragraph ***"biological monitoring will be conducted according to the Water Licence. This currently provides for monitoring of benthic invertebrate populations... every second year."***

Given that metal concentrations in fish require further characterization (pg 16, last paragraph) the aquatic biological monitoring program should be expanded as was rationalized for the water quality program (as described on page 54, second paragraph of Section 2.1.1.4). Further, given the importance of the terrestrial wildlife resources to the Ross River Dena community (Section 2.3.8, pg 27), this aspect of the biological monitoring program should also be included in the formal site monitoring program. Leaving additional biological monitoring to be conducted after the completion of the gap analyses during the preparation of the EA for the proposed final closure concept (Section 2.2.3.1, paragraph 3) may preclude collection of this data during the operation and management period which might further preclude incorporation of the data into the closure planning process. It is expected that a detailed monitoring plan will be provided with the water license application. A summary of the changes in the monitoring plan from previous years would also be helpful.

Section 2.2.2 pg 58, second paragraph **"previous abandonment options need to be reassessed in an integrated fashion"**

Agreed, however the approach proposed (Sections 2.2.2.2, 2.2.2.3 and 2.2.2.4) relies too heavily on first determining preferred closure methods for each of the major areas (Faro Mine site, Rose Creek Valley and Vangorda Plateau site) independently and only then amalgamating them to a final integrated closure and reclamation plan. There appears to be opportunities to streamline the process, eliminate duplicate studies and develop better overall closure options through integration.

A description of the wastewater treatment process and operating parameters should be detailed in the licence application. We would expect to see design drawings and a design report which rationalizes all design criteria and operating parameters. Treatment commitments required (pg 3-10 1st paragraph Vol. II) as a basis to identify accountability.

Fish passage is reportedly being blocked by rock drain culverts under the haul road (3.3.2.4 page 3-8 Volume II page 4-104). This should be examined during the operation and management period and alternate methods suggested to enhance fish passage.

It is good that water quality data has been collected since the late 1990's. The data is comprehensive and seems complete. It is good that the database includes full metal scans and not merely selective metals as in earlier years.

p.48 The mill (treatment system) may be altered, enlarged or otherwise modified as appropriate to increase economic, operational and safety efficiencies
p.48 Other sources of contaminated water may be directed to the mill (treatment system) in the future where this is deemed practical and within the scope of diligent environmental management".
p.48 Implementation of variations on the contingency treatment system.
p.49 Other treatment methods might also be employed on a trial or permanent basis as appropriate to achieve efficient treatment of water
p. 53 Testing of flocculant systems in Sheep Pad Pond
p. 54 Diversion of Grum Creek into Moose Pond as a groundwater recharge scheme may or may not be continued

It is suggested that the license also be clear in providing a description as to the types of routine maintenance activities that would be expected to be conducted so that the reviewer is aware as to those activities which might be considered more significant, and thus require amendment to the license, or some alternate process which is suggested by the IR.

C.2 Hydrogeology

As is described within the document, groundwater monitoring is an integral component of the environmental monitoring plan. It is mentioned that groundwater monitoring is undertaken on a more frequent basis than is mandated by the existing water licence **(Section 2.1.1.4, Page 54)**, and that this level of effort is considered necessary for a proper evaluation of environmental effects. We concur with this approach, and further add that the evaluation of trends in groundwater quality can only be evaluated with additional temporal data.

Several reports which discuss groundwater issues are mentioned in the documentation. The most recent hydrogeological report is Gartner Lee Limited (2001) *Rose Creek Tailings Facility – 2001 Hydrogeological and Geochemical Investigation, Draft Report.* A brief summary of the findings of this report is provided in **Volume I, Section 2.3.5, page 20**. The key findings of the report are not sufficiently outlined here to provide a critical evaluation. With respect to an evaluation of hydrogeological conditions, it would be useful to have more specific information carried forward from this technical report to the Project Description (Volume I) and Background Information (Volume II) to more fully evaluate the adequacy of the description of existing groundwater conditions.

The document states that the impacts to the underlying aquifer, as measured by zinc concentrations, do not extend beyond the toe of the Rose Creek Dam **(Item 6, Section 2.3.5, page 21)**. Further explanation of the actual measurements of dissolved zinc at this location, and a discussion of the compliance boundary would be necessary for a critical evaluation. Specific criteria for groundwater quality are not outlined. It is suggested that groundwater quality should also meet the "waste discharge" criteria outlined in the licence **(Item 26 of licence)**. The current definition of "waste discharge" would therefore have to be amended to specifically include contaminated groundwater that may result from mine activities other than those stated (i.e. waste rock dumps). To implement this criterion properly, the proponent would have to also identify boundary conditions at which the criteria are expected to be met.

In addition, there is no mention of predictive modeling of the groundwater conditions being undertaken, which is necessary to evaluate the potential for future impact to the groundwater resources.

A key area of potential hydrogeological impact is Rose Creek and the Rose Creek aquifer. There is discussion of a groundwater contingency program for the North Fork of Rose Creek (Item 39 of licence), however, the trigger program and contingencies require further development, rationalization, and description. In addition, there is no other mention of contingencies for groundwater impacts that may occur in other locations.

From the review of Volume II there is some key summary information from the Hydrogeological Investigation presented in this document (figures 4.15 to 4.18), however, these figures represent existing conditions. Future expected impacts are not discussed, nor is there any contingency plan in place to address future potential impacts. Additonally, the focus of the groundwater investigation has been on the Rose Creek Tailings Facility. Groundwater impacts from other facilities and activities of the mine site are discussed only briefly (i.e.Grum Rock Dump Section 4.2.9.2 Volume II and Vangorda Rock Dump Section 4.2.9.3). No contingencies for unacceptable impacts at these locations are discussed.

	Nov	Dec	Dec	Dec	Dec	Dec				hours	$/h	$
D. Dreyer	2	1	6	6	5	5				25	100	2500
G. Smith	1		6	6		5				18	100	1800
J. Acklack		2	6	6		2				16	80	1280
V. Mifander			6	6		2				14	100	1400
	preparing and writing workplan, finalising funding proposal,	organising and preparing meeting	disscussion of reviw groups, Chief and Council and Elders	presentation by Leslie Gomm; disscussing changes to proposal internally; including elders	writting report	review of report by team; Writing community material (newsletter)						6980
Honorarium	# of people	costs per day	# od days									$ (Honorarium)
Elders	3	175	2									1050
Translator	1	300	2									600
	km	$/km	$ (Incl. Gas)	Hotel (nights)	$/night	$ (Hotel)	Meals (day)	$/day	$ (meals)	Flight	Travel time	$ (travel cost)
D. Dreyer	840	0.65	546				6	50	300	800	1200	2902
V. Mifander	840	0.65	546	3	145	435	4	50	200		600	1781
TOTAL												13313

11/21/2002 THU 11:39 FAX 8679692405 ROSS RIVER DENA COUNCIL 032/032

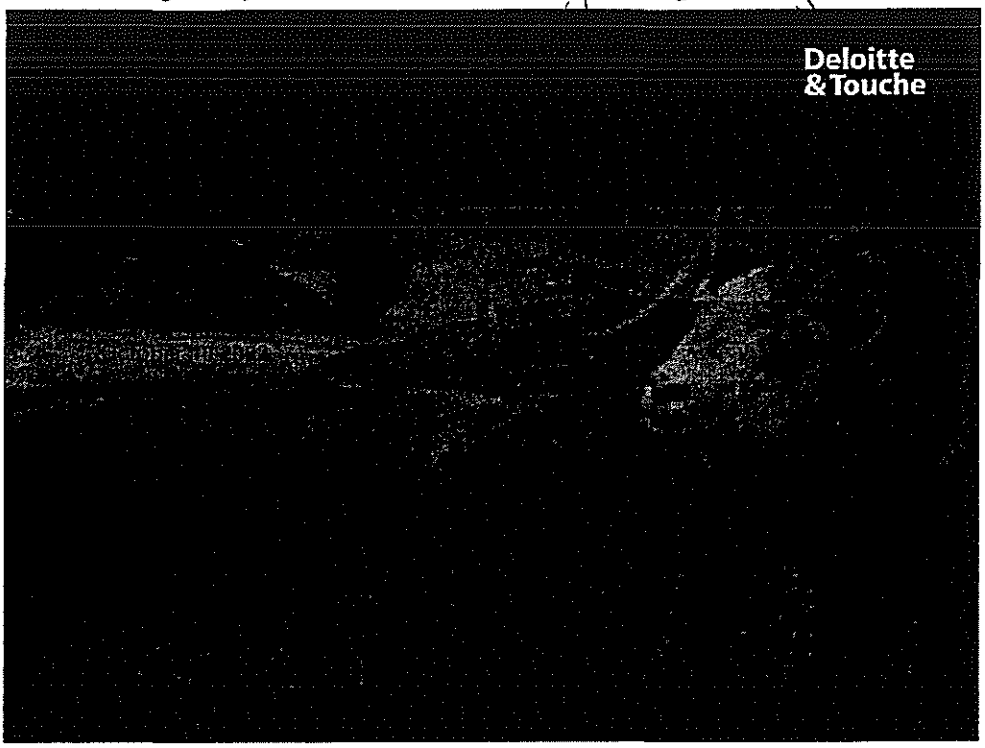
Anvil Range Mining Corporation (Interim Receiver)
Public Meeting

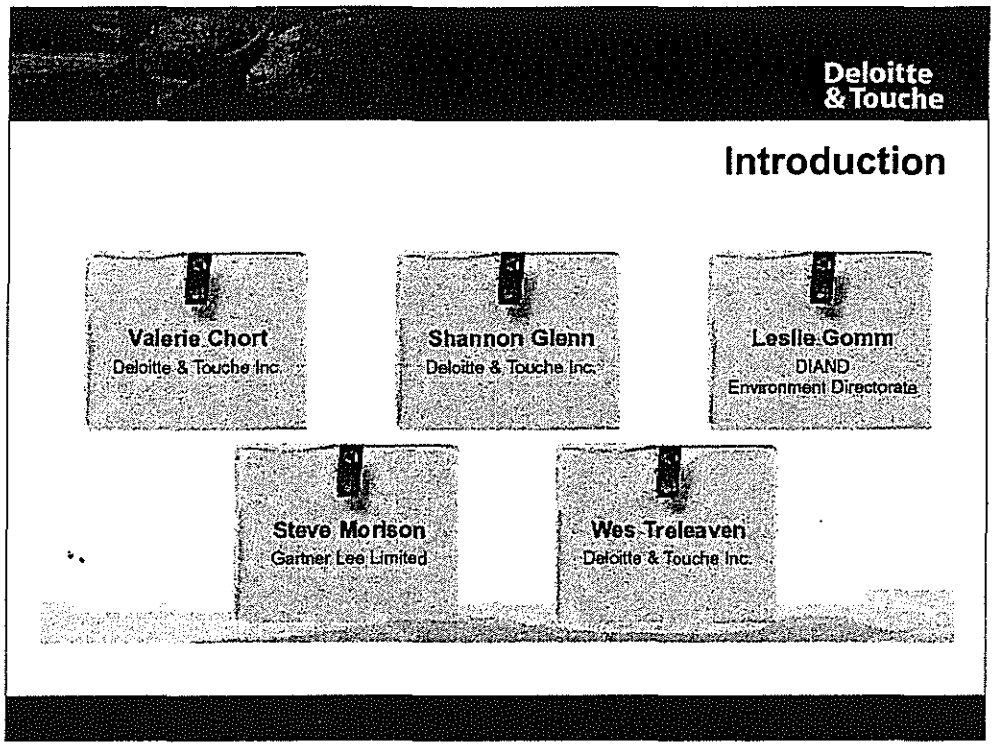
Environmental Assessment Relating to Renewal of Water Licence

Deloitte & Touche Inc., as Interim Receiver of Anvil Range Mining Corporation, will be applying to renew the water licences for the mine site. The current licences expire December 31, 2003. As a first step, a Project Description was submitted in May to DIAND Environment Directorate to initiate an environmental assessment of proposed activities under the Canadian Environmental Assessment Act. The proposed next licence term is 5 years. Planned activities will include continued care and maintenance, as well as studies leading to the development of and permitting a Final Closure and Reclamation Plan. This public meeting is planned to obtain input into the preparation of an Environmental Assessment Report related to proposed activities.

DATE Thursday, October 10, 2002
TIME 7:00pm
LOCATION Gathering Room at the School, Ross River

Presentation to Chief's Council.
Public meeting on same day cancelled due to death in community. Meeting re-scheduled for October 25 2002.



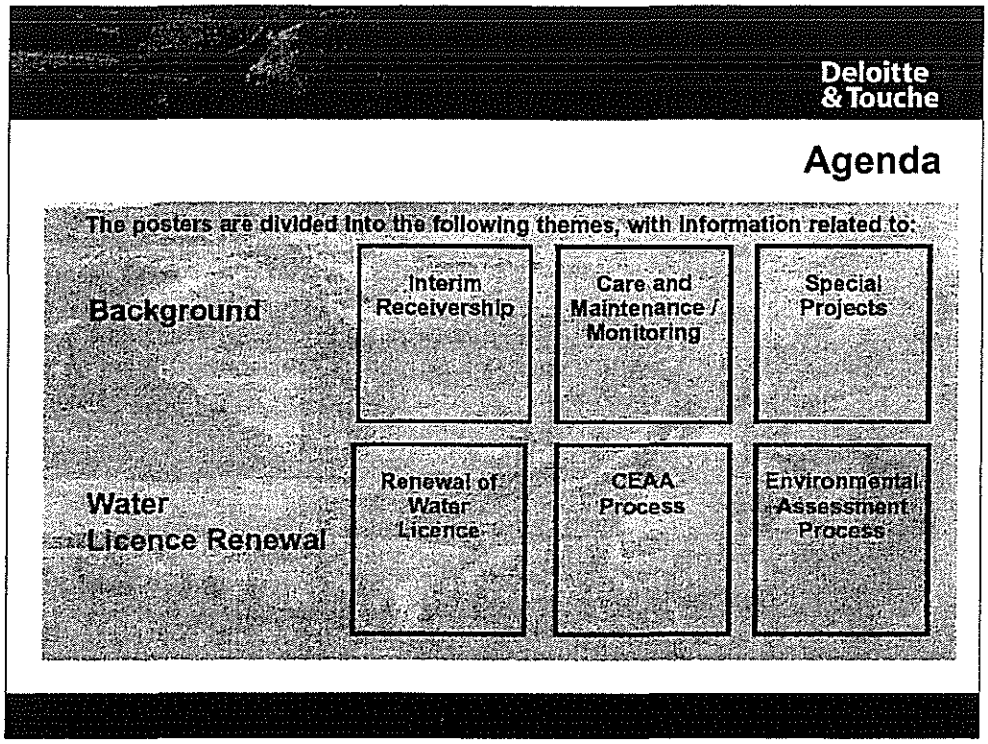


Good evening and thank you for coming. My colleagues and I, as well as representatives from DIAND are very grateful for the opportunity to come and speak in your community and to discuss the next five years at the Anvil Range property.

The purpose of this meeting is to discuss the environmental assessment related to renewing the water licences. My name is Shannon Glenn. I am a manager in the Environment Health and Safety practice at Deloitte & Touche. I'm here to answer questions on the topic of the water licence renewal and the associate environmental assessment. Also, Leslie Gomm from DIAND Environment Directorate is here to discuss the environmental assessment process. Steve Morison, of Gartner Lee Limited is also here to help answer questions about the environmental assessment. He is helping Deloitte & Touche.

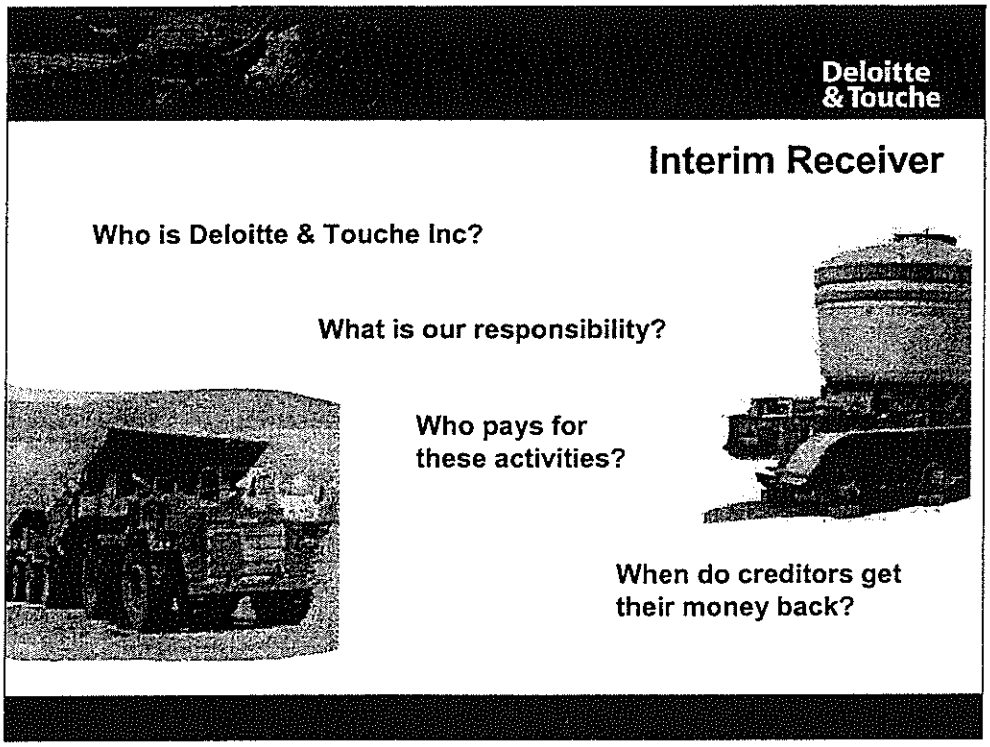
We understand that you may also have questions about the property that are not directly related to this environmental assessment. For that reason, Wes Treleaven in his capacity as Interim Receiver is also here, as well as Valerie Chort, our National Practice Leader in Environment Health and Safety.

Because it is a large topic, and because we know there is a great deal of interest, we would like to suggest the following way of proceeding to give everyone an opportunity to find out what they want to know. Leslie and I will discuss with you the environmental assessment related to the water licence renewal. If you have questions, feel free to ask. If the question is about something else other than the water licence, we will write it down on this flip chart and return to it after the water licence discussion. This will ensure that everything gets covered.



Leslie and I will be discussing the same information as on these posters that you see around you. So if you miss anything during the presentation, please walk around at the end of the evening and have a second look.

In order to understand the water licence process, we will discuss a little bit of background around how the site is managed. Then we will discuss the water licence renewal process, with Leslie speaking about the CEAA process.



Who is Deloitte & Touche Inc. and why are we here?

- Mining and milling operations ceased in early 1998.
- Deloitte & Touche Inc. was appointed Interim Receiver of Anvil Range Mining Corporation pursuant to an order of the Ontario Court (General Division) in April 1998.
- Studies commissioned by Deloitte & Touche Inc. and DIAND have indicated that it is not economically feasible to re-open the mine.

What is our responsibility?

- An Interim Receiver is a court officer who represents all parties who have an in interest in the administering of an estate.
- We oversee the management of the property under the terms of the Water Licences.
- Our mandate is specified in the court order and includes:

"to receive, preserve, protect, and realize upon the Assets"

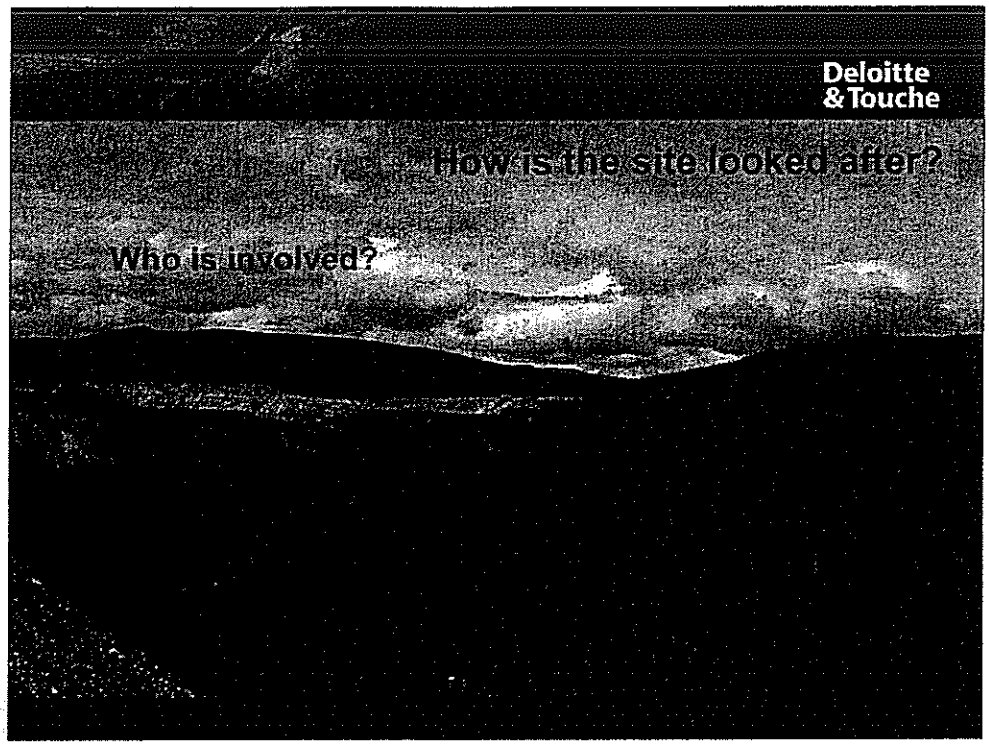
"to apply for any permits, licences, approvals, or permissions on behalf of [Anvil Range] as may be required by any government or regulatory authority"

Who pays for these activities?

- The Government of Canada currently provides the necessary funding to support, maintain, and monitor the Faro site.

When do creditors get their money back?

- A Plan of Arrangement (Plan) for returning money to secured creditors has been negotiated and approved by the Ontario Court of Appeal. Approximately $9 million is available.
- The Interim Receiver is waiting for a potential appeal of the Plan to the Supreme Court before distributing assets from the Faro mine.



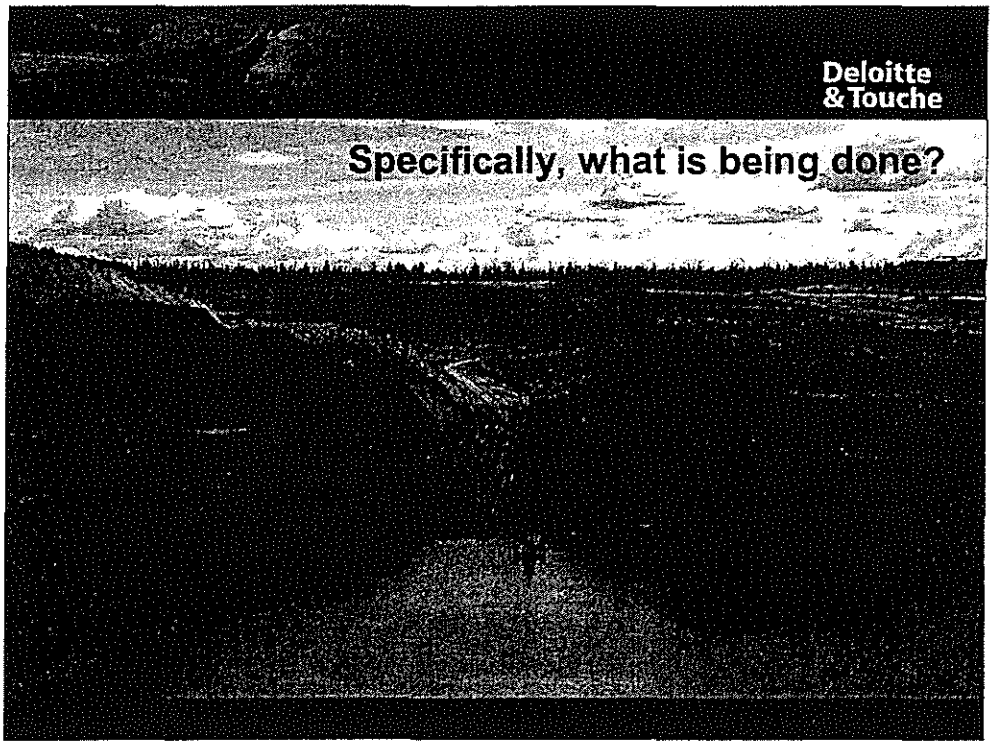
How is the site looked after?

Who is involved?

- Operational personnel play a key role, under the supervision of the Interim Receiver.
- Stakeholders include DIAND, Technical Advisory Committee, communities and other regulatory bodies such as Environment Canada and Department of Fisheries and Oceans.

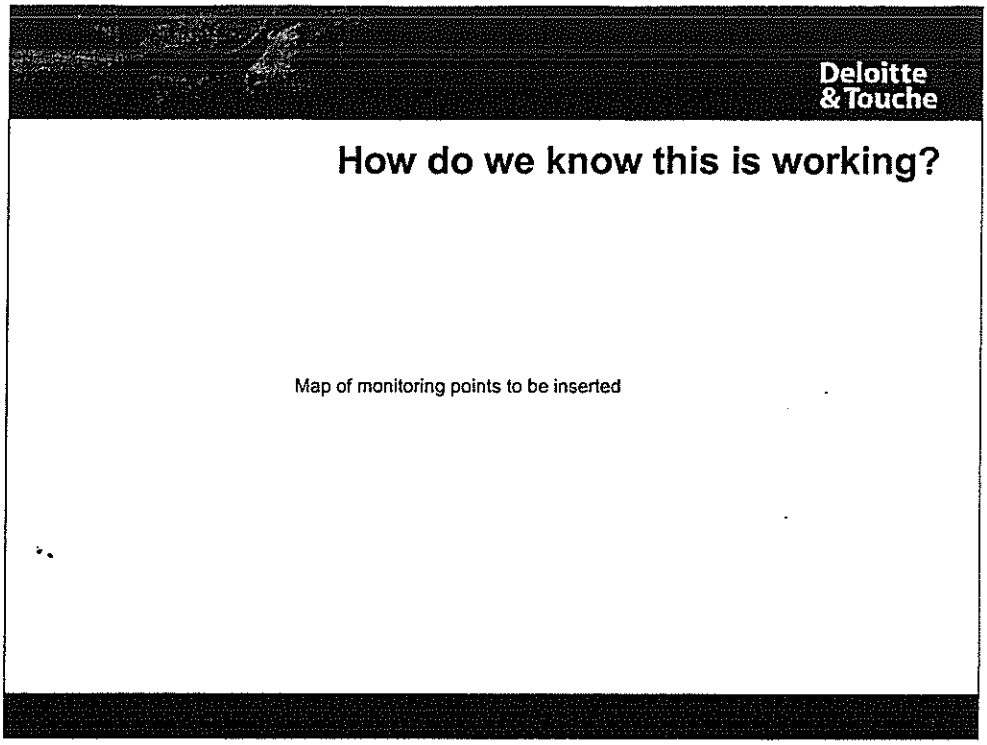
How do we decide what to do at the site?

- The site is managed under the terms of the Water Licences. A risk-based management approach is used to identify and prioritize short- and long-term issues at the property.
- Routine care and maintenance, monitoring activities, and special studies are planned on a yearly basis
- Experienced full-time and seasonal operational personnel implement care and maintenance activities according to best technical practices.



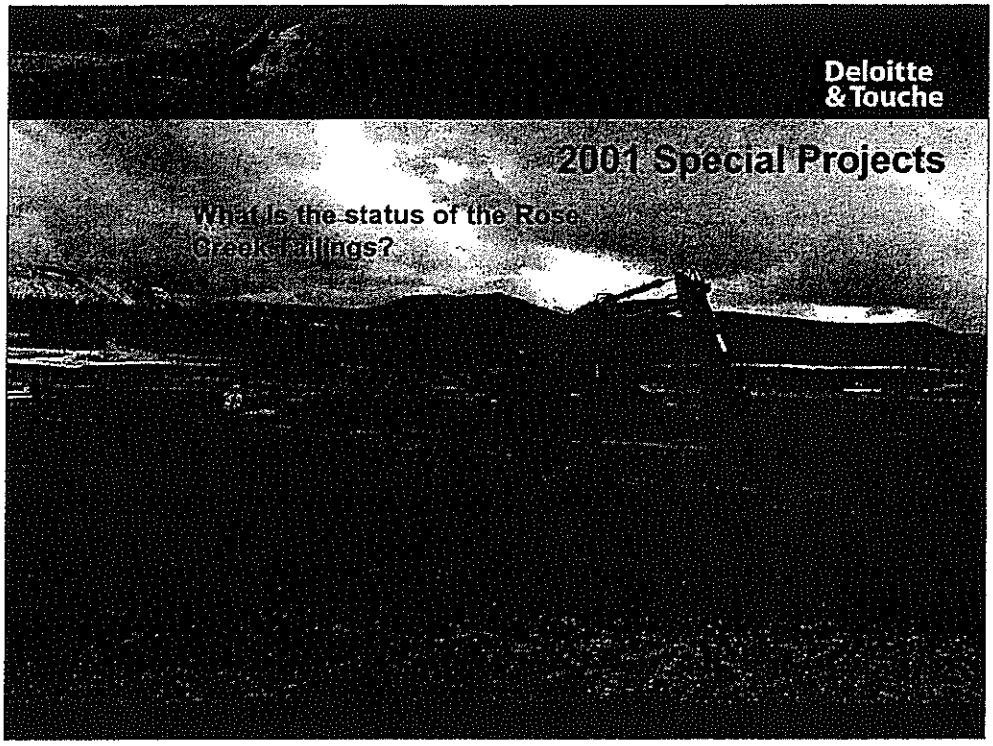
Specifically, what is being done?

- The water treatment program has been enhanced on the Faro side, and is in start-up on the Vangorda side of property.
- Other site reclamation activities include hydrocarbon remediation and removal of hazardous waste.
- Dams and diversion structures are inspected and maintained.



So how do we know this is working?

- Monitoring requirements are dictated by the Water Licences. The Interim Receiver has increased the number of environmental monitoring points to those required by the licences.
- Environmental and geotechnical monitoring is carried out by site personnel, with the assistance of consulting firms.
- On-site laboratory results are confirmed by independent laboratories on a regular basis.
- Monthly and annual reports are filed by the Interim Receiver with the Yukon Territory Water Board.
- Regulatory agencies routinely visit the site to oversee care and maintenance activities and to provide input into new projects.



In addition to care and maintenance and routine monitoring, the Interim Receiver initiates special projects related to maintenance or site characterization.

What is the status of the Rose Creek Tailings?

- 54 million tons of tailings were deposited in the Rose Creek Valley during operations.
- A characterization study done in summer of 2001, in consultation with DIAND and Environment Canada. New monitoring wells were installed at 11 locations.
- The study revealed contaminants beneath the tailings deposit, but not down gradient of mine area.

Could we use Renewable Energy at this site in the future?

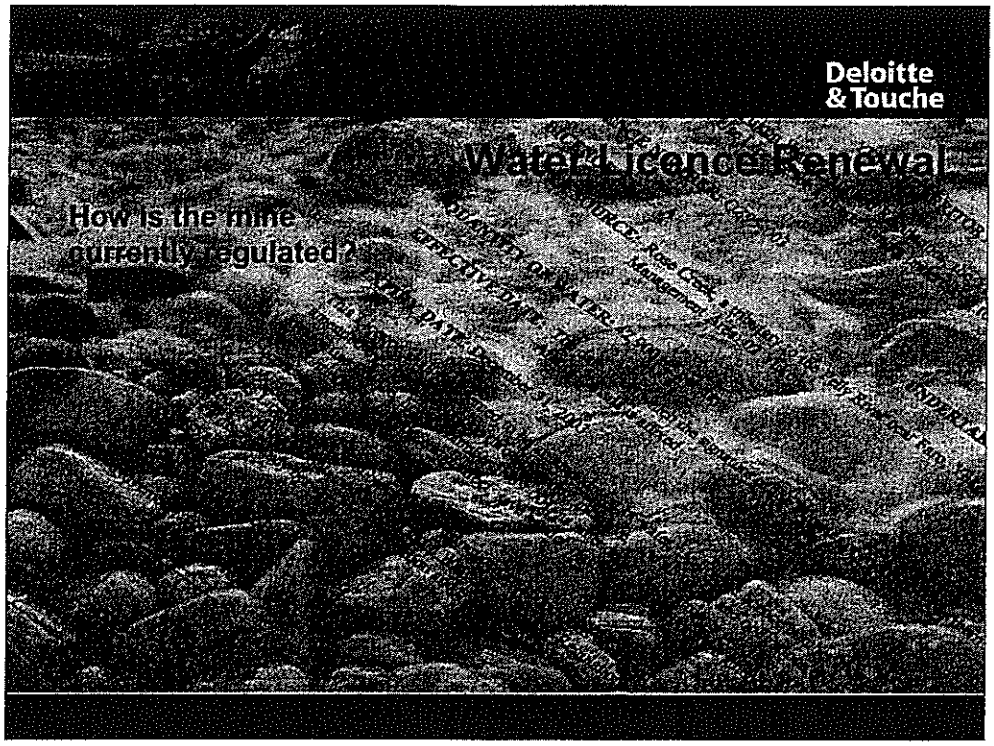
- An energy audit was conducted in 2001, and modifications made to the electrical system allowing significant energy cost savings.
- Also, a pre-feasibility of micro-hydro and wind-monitoring long-term options was conducted, indicating a number of possibilities.
- In 2002, Yukon Energy Corporation has initiated a windmonitoring program on the Grum Rock dump. A 30 m tower was installed in June.

How is the Fresh Water Supply Dam holding up?

- This dam, built in 1968, is located above the tailings.
- Studies in 2001 indicated that the dam is an integral part of the valley system. It also has a low-level pipe underneath it which has deteriorated over the years.
- To mitigate this risk, the Interim Receiver is planning to perform a two-stage remediation, including (1) the lowering of the existing spillway, and (2) the removal or remediation of the low-level pipe.

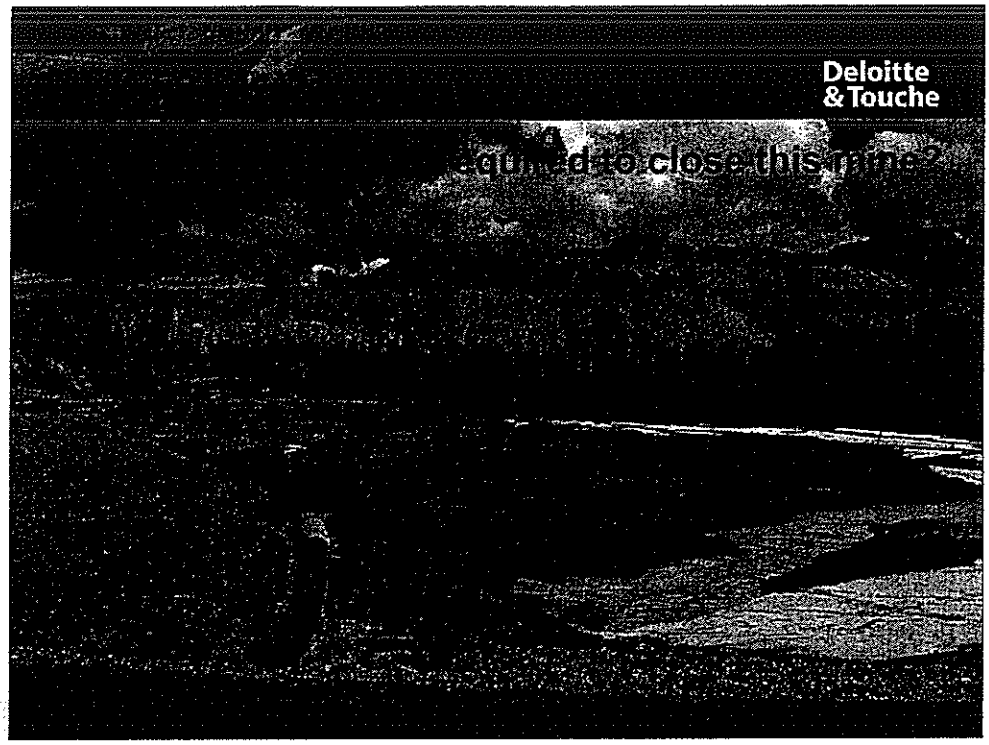
In 2002, studies are also being conducted, aimed at answering the following questions:

- What is the status of acid rock drainage on the mine site?
- What are the alternatives with respect to relocating the Faro and Vangorda Creeks?
- What is the stability of the Faro and Vangorda Pits?



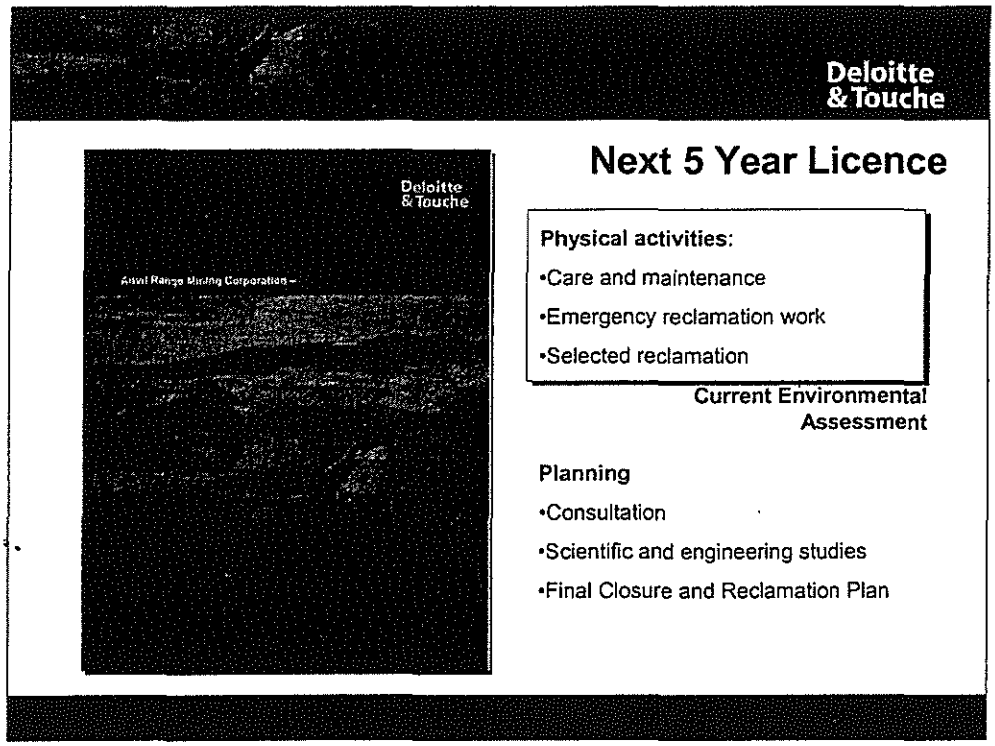
How is the mine currently regulated?

- The property is managed under the terms of two Water Licences.
- These licences dictate the effluent discharge standards, maintenance requirements, monitoring and reporting requirements, and contingency planning and abandonment requirements.
- These licences expire December 31, 2003.



What is required to close this mine?

- The cost to remediate at this site is currently estimated to range between $200 to $500 million.
- Given the magnitude of costs and the importance of long-term environmental protection, an approved Final Closure and Reclamation Plan is required.
- This plan would be based on reliable information about all aspects of the property. Its parts would be integrated to ensure maximum environmental protection.



What is the Interim Receiver planning?

• The Interim Receiver has received approval and funding to apply for a renewal of the Water Licence.

• As a first step, we have submitted a Project Description which describes our intent to apply for a **combined five-year licence** for the property, which includes:

– Care and maintenance and protection of the environment.

– Consultation with stakeholders.

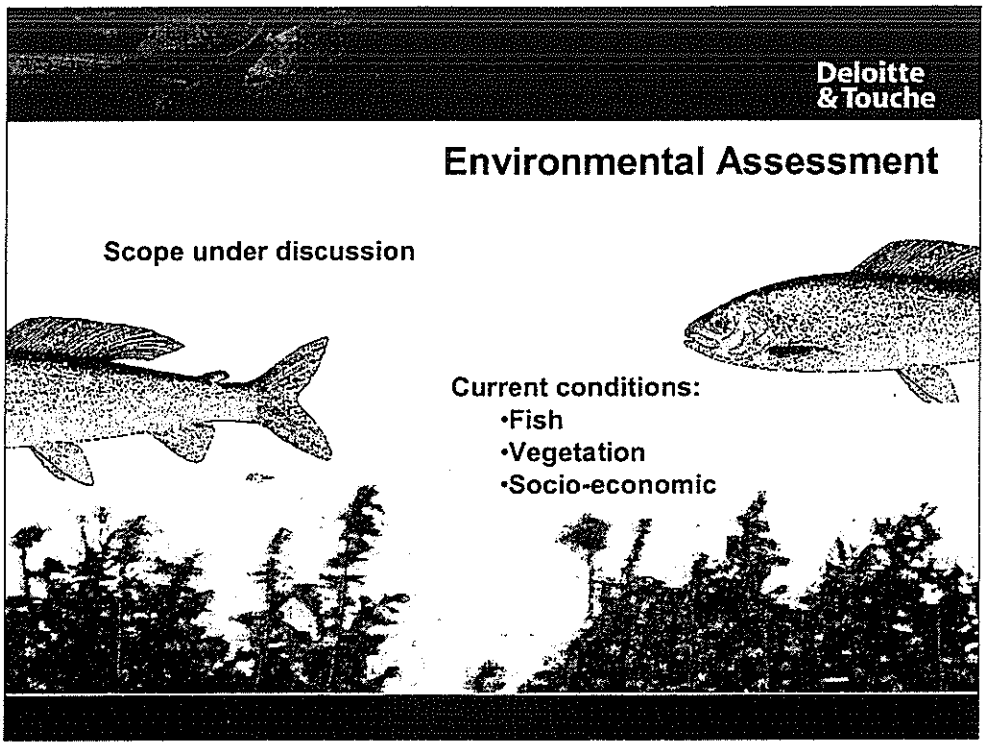
– Management of any emergency reclamation work on-site.

– Continued selected reclamation of mine elements which are not integrated or linked to rest of the property from perspective of closure planning.

– Scientific and engineering studies related to the preparation of a final closure and reclamation plan for the property.

– Preparation of a Final Closure and Reclamation Plan.

• The Interim Receiver is the proponent on this project. DIAND is currently the exclusive funder of the proposed work.



Where are we now in the Environmental Assessment Process?

• The Interim Receiver is currently waiting for Guidelines that will set the scope for the environmental assessment.

• In response to the Guidelines, an Environmental Assessment Report will be developed.

• Currently identified base line information gaps are:

2002 Fisheries Program

– Objectives: To develop a comprehensive understanding of fish habitat and fish utilization upstream and downstream of the Faro Mine site.

– Methods: Fish utilization assessments, population sampling, and sampling for metal analyses; and Mapping of bathymetry of the Freshwater Reservoir.

2002 Vegetation Sampling Program

– ObjectivesTo test for elevated metals in vegetation up gradient and down gradient of the Faro Mine site.

– Methods:Vegetation samples will be taken from grasses, lichens, and woody species, including roots at least 23 sites around the Faro Mine site.

2002 Socio-economic Program

– Objectives:To produce a current socio-economic analysis of Faro and Ross River related to activities at the Faro Mine site.

– Methods:This will include a review of previous socioeconomic studies, as well as current published and unpublished government sources and local knowledge in both Faro and Ross River. There is a need to update the socio-economic conditions for the Water Licence renewal.

Deloitte & Touche

Thank you

For information about the receivership and environmental management and long-term planning of the site:

Deloitte & Touche

W.A. (Wes) Traserras

Deloitte & Touche

Valerie Chort

For information about the current CEAA and Water Licence renewal process:

Deloitte & Touche

Shannon Glenn

Leslie Gomm, Ph.D., P.Eng.

Canada

Managing the process on behalf of Deloitte & Touche

Managing the process on behalf of DIAND Environment Directorate

Deloitte & Touche Inc.
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79 Wellington Street West
PO Box 29 TD Centre
Toronto, ON M5K 1B9
Canada

Tel: (416) 601 6150
Fax: (416) 601 5901
www.deloitte.ca

Deloitte & Touche

October 23, 2002

Jack Caesar
Chief, Ross River Dena Council
General Delivery
Ross River, Yukon
Y0B 1S0

Dear Chief Caesar,

RE. RESCHEDULED ROSS RIVER COMMUNITY MEETING REGARDING THE ENVIRONMENTAL ASSESSMENT RELATING TO THE RENEWAL OF THE ANVIL RANGE WATER LICENCES

We would like to thank you again for the opportunity to come to the community on October 10 2002 to discuss the environmental assessment relating to the renewal of the water licences for the Anvil Range property. We welcomed the discussion that took place during the meeting with the Council. We also would like to again express our regrets and sympathies around the circumstances that led to the postponment of the public meeting that had been planned for this evening.

Further to discussions with Doris Dreyer and Jason Acklack last week, we are writing to confirm our attendance for a rescheduled public meeting at 3 pm on Friday October 22. We would like to thank the community for the priority that has been placed around rescheduling this meeting.

As previously agreed, we will be bringing refreshments for the meeting. We will be presenting the same material that was discussed during the meeting with the Council on October 10. We look forward to discussing the results of the community's technical and non-technical review reports that will come out from this process. I understand from Leslie Gomm that she would also appreciate receiving a copy of these reports. She will incorporate these as she develops the Guidelines for the environmental assessment report.

If you have any questions regarding these matters or more broadly, please give me a call at 416-601-6454.

I look forward to seeing you on Friday.

Yours very truly,
DELOITTE & TOUCHE INC
in its capacity as Interim Receiver of
ANVIL RANGE MINING CORP.

Shannon Glenn
Manager

Deloitte & Touche Inc.
Suite 1900
79 Wellington Street West
PO Box 29 TD Centre
Toronto, ON M5K 1B9
Canada

Tel: (416) 601 6150
Fax: (416) 601 5901
www.deloitte.ca

Deloitte & Touche

October 31, 2002

Ms. Leslie Gomm
Manager, Project Assessment
DIAND Environment Directorate
345-300 Main St.
Whitehorse, YK
Y1A 2B5

Dear Leslie:

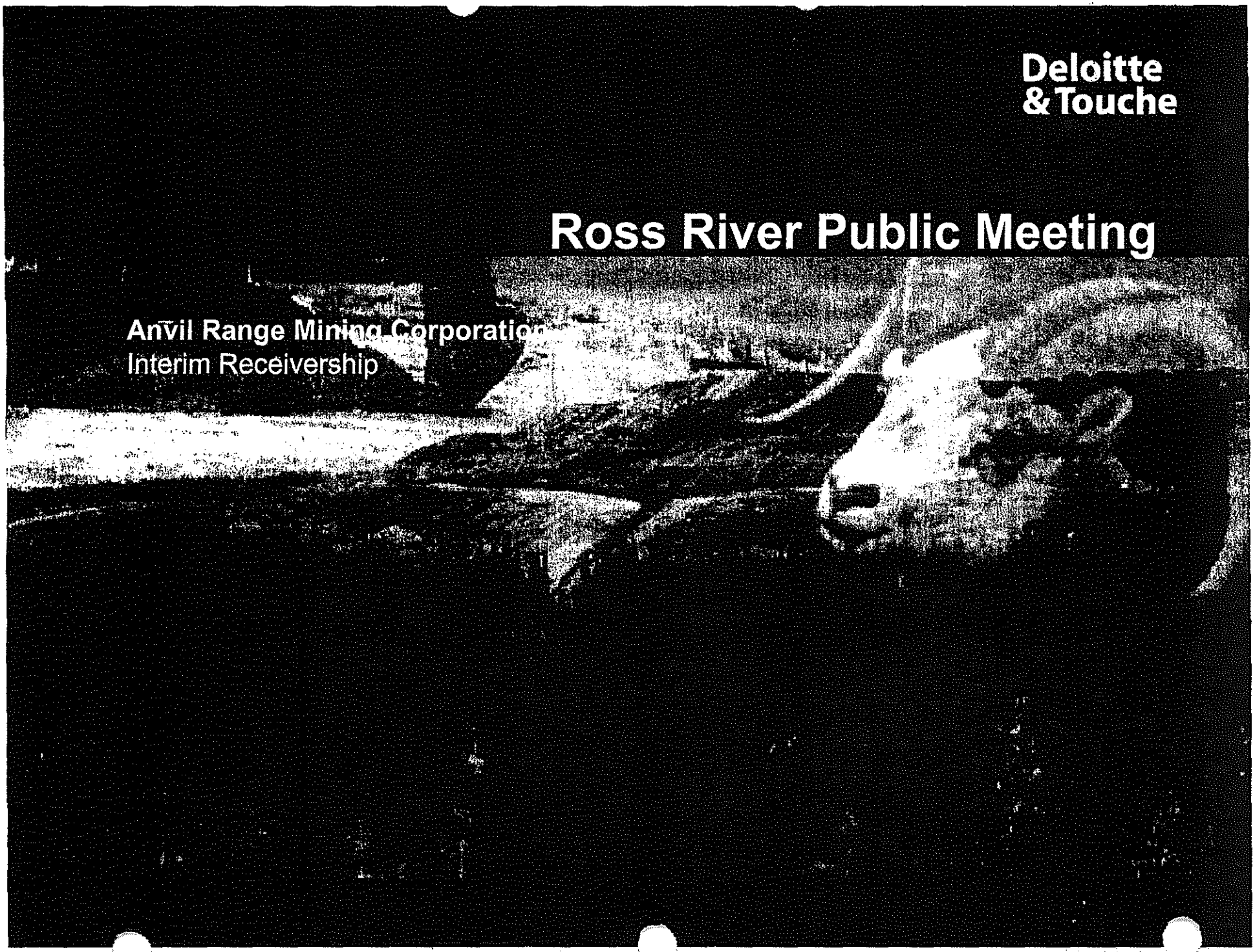
Please find here included a copy of the presentation which was given at the community meeting in Ross River on the Project Description related to the Water Licence Renewal for the Anvil Range Mining Corporation (Interim Receiver) mine property. This meeting was held on October 25 2002.

Also, please be advised that representatives from the Community indicated to me that their technical and non-technical reviews were essentially complete and that they were aiming to submit these to you shortly.

If you would like to discuss further, please give me a call at 416-601-6454.

Yours very truly,
DELOITTE & TOUCHE INC
in its capacity as Interim Receiver of
ANVIL RANGE MINING CORP.

Shannon Glenn
Manager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Ross River Public Meeting
Anvil Range Mining Corporation
Interim Receivership

Deloitte & Touche

Agenda

The posters are divided into the following themes, with information related to:

Background	Interim Receivership	Care and Maintenance / Monitoring	Special Projects
Water Licence Renewal	Renewal of Water Licence	CEAA Process	Environmental Assessment Process

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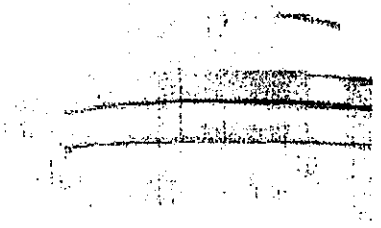
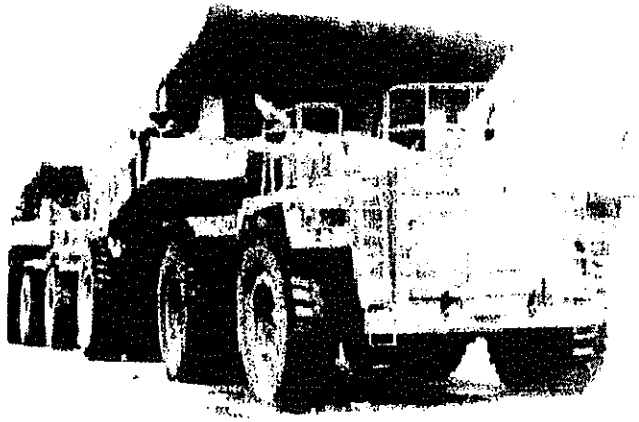
Interim Receiver

Who is Deloitte & Touche Inc?



What is our responsibility?

Who pays for these activities?



When do creditors get their money back?

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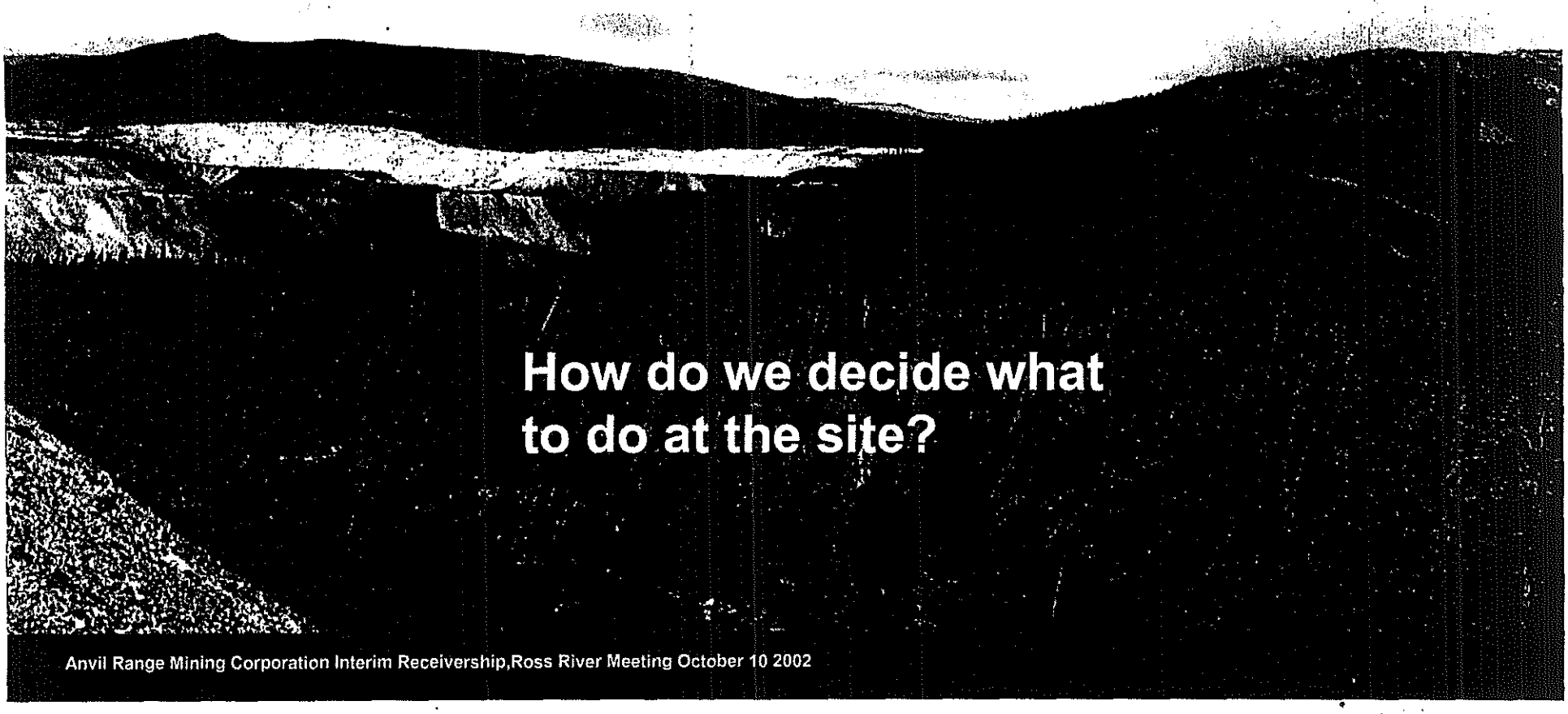
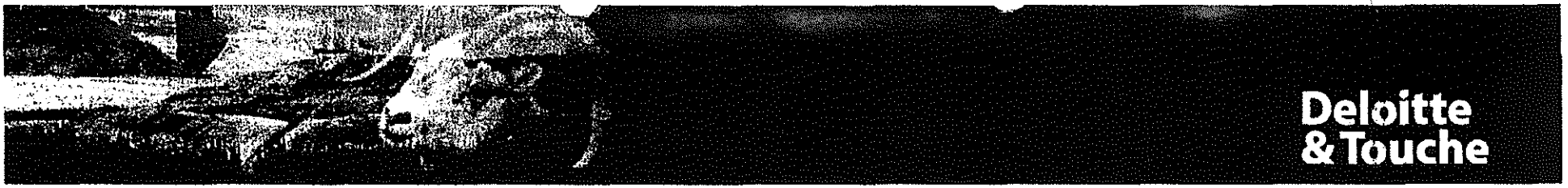
What care and maintenance is done?

Who is involved?



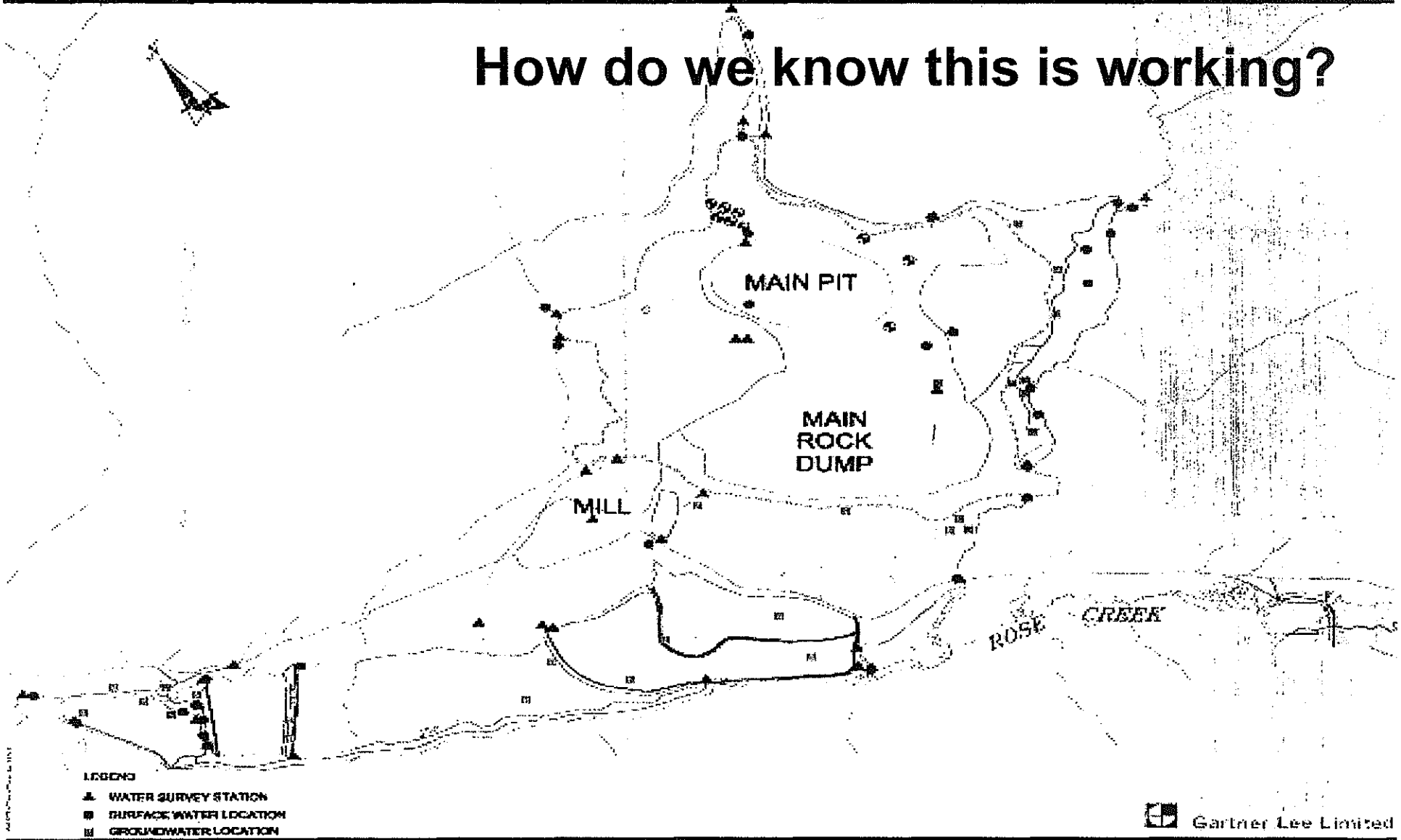


What is being done?

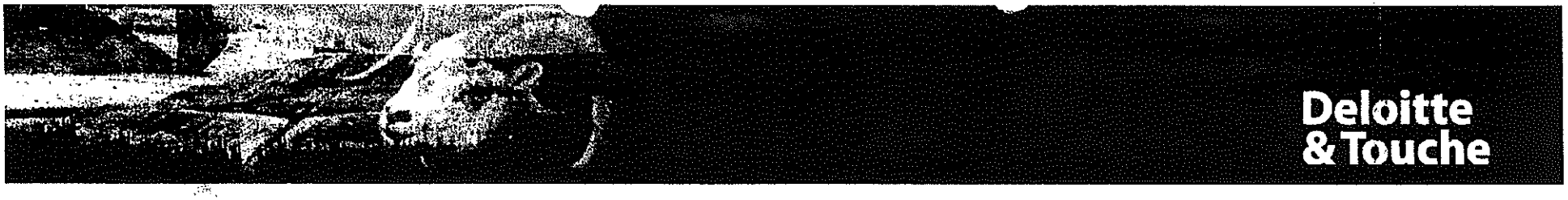
Anvil Range Mining Corporation Interim Receivership,Ross River Meeting October 10 2002

Deloitte & Touche

How do we know this is working?



Gartner Lee Limited



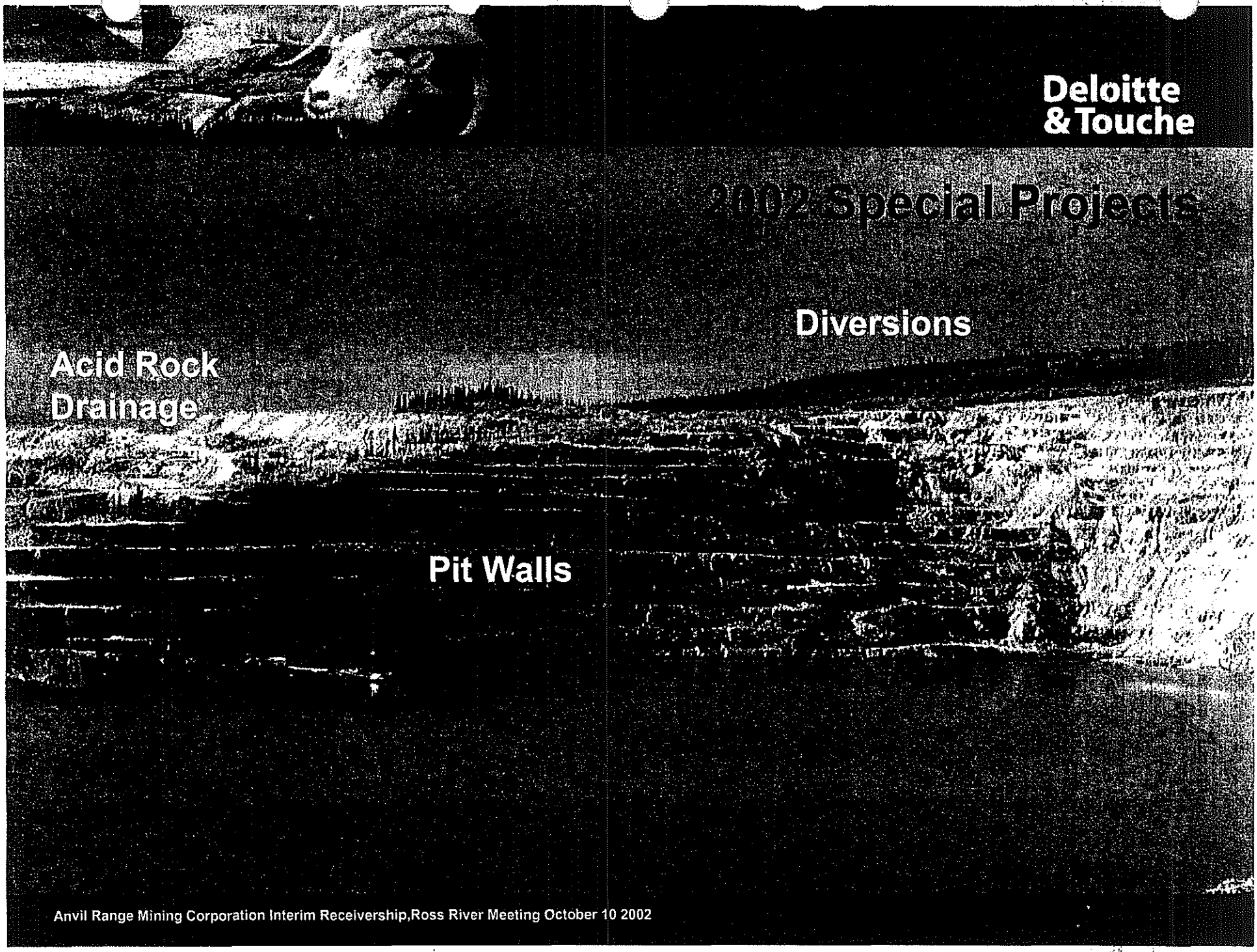
Deloitte & Touche

2001 Special Projects

What is the status of the Rose Creek Tailings?

Could we use Renewable Energy at this site in the future?

How is the Fresh Water Supply Dam holding up?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& Touche
2002 Special Projects
Diversions
Acid Rock
Drainage
Pit Walls
Anvil Range Mining Corporation Interim Receivership,Ross River Meeting October 10 2002

Deloitte & Touche

Water Licence Renewal

How is the mine currently regulated?

Use Licence for a quartz mining undertaking t

LICENCE NUMBER: QZ95-003

LICENCE TYPE: A

WATER SOURCE: Rose Creek, a tributary to the Pelly River near Faro, Yuko
Management Area: 02 Yukon

QUANTITY OF WATER: 42,900 m³ per day

EFFECTIVE DATE: The date upon which the signature of the Minister of Indian and Northern Affairs Canada is affixed

EXPIRY DATE: December 31, 2003

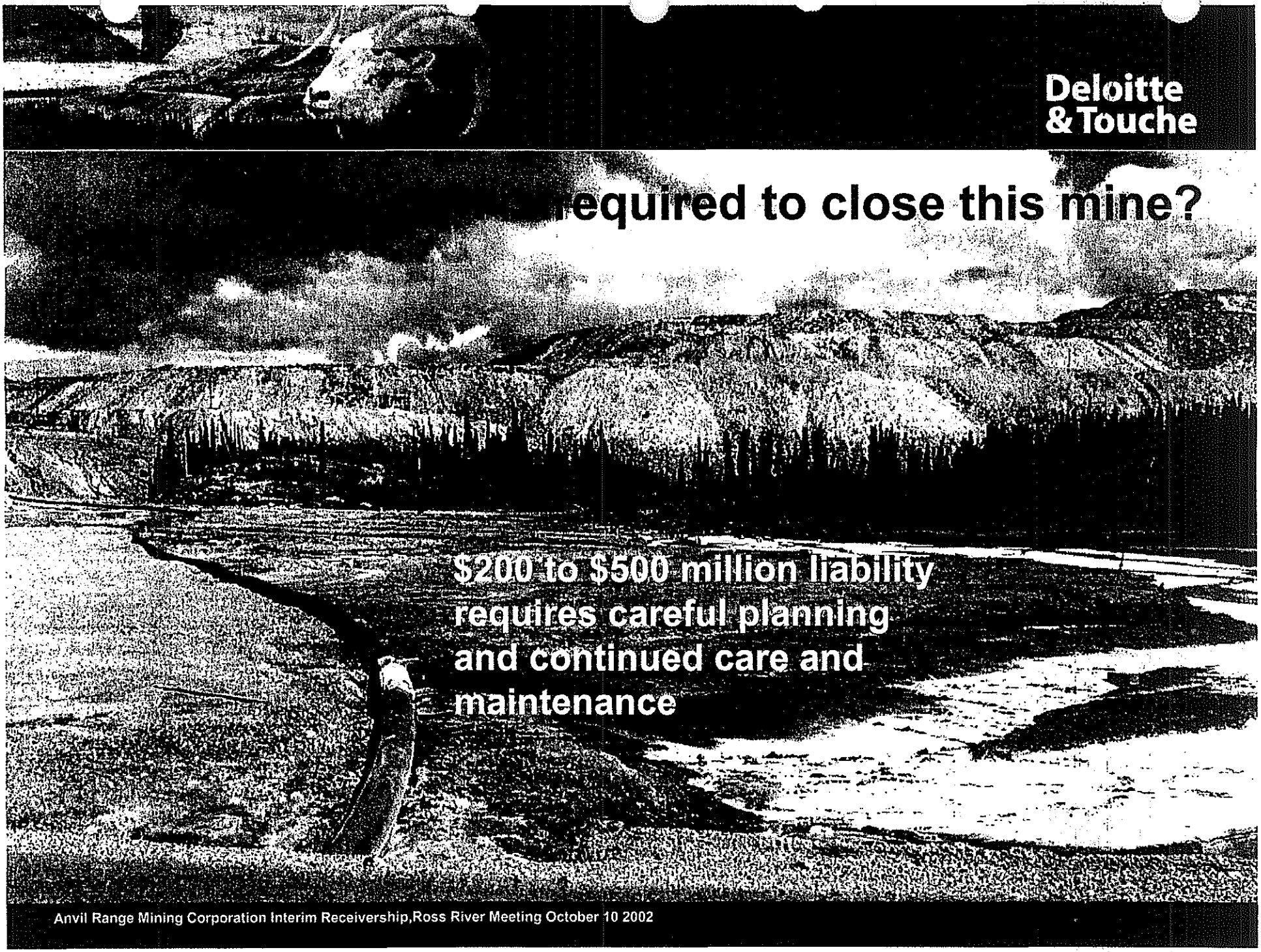
This Licence shall be deemed to be an amendment of water use licence licence number IN89-0
amended by amendments one through seven inclusive, and all rights and obligations conf
water use licence licence number IN89-001, as amended by amendments one through s
are continued in full force and effect, save as such rights and obligations are amende
licence.

This Licence shall be subject to the restrictions and conditions contained he
and conditions contained in the Yukon Waters Act and the Regulations
is a discrepancy between the application and the terms of this Licence
prevail.

Dated this 27 day of
November, 1997

Witness

Dated this 30th day of
199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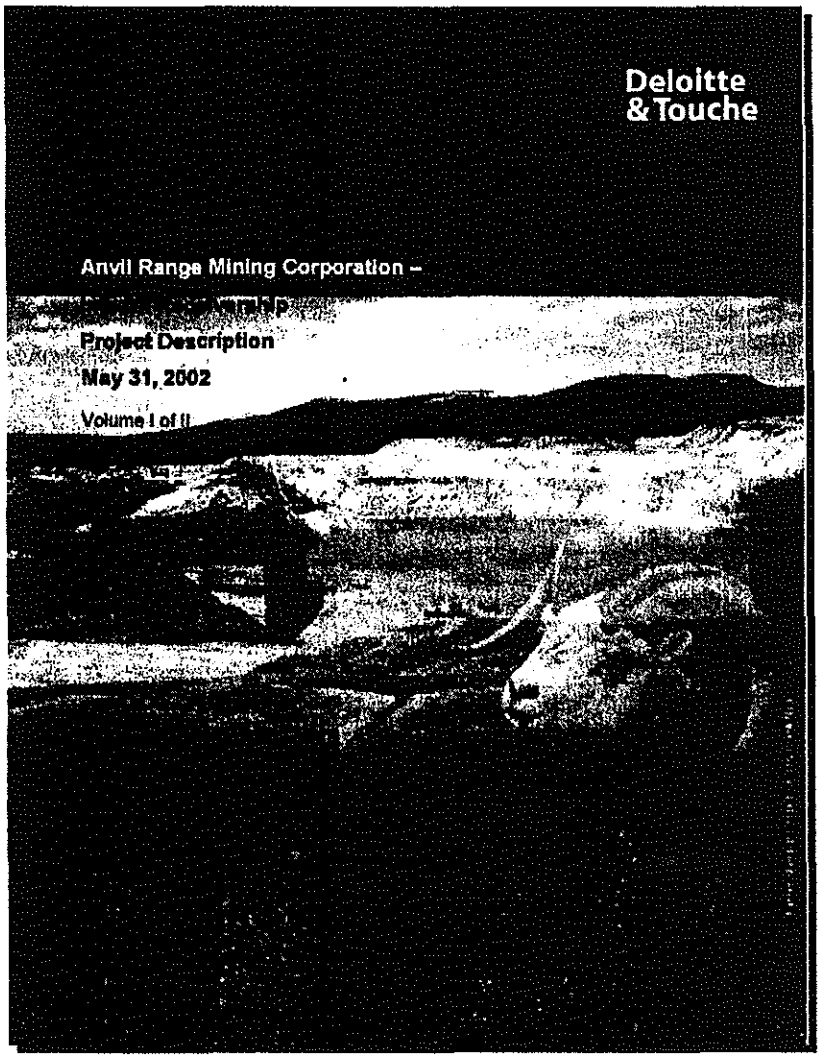
& Touche
required to close this mine?
$200 to $500 million liability
requires careful planning
and continued care and
maintenance
Anvil Range Mining Corporation Interim Receivership,Ross River Meeting October 10 2002



Next 5 Year Licence

Physical activities:

- Care and maintenance
- Emergency reclamation work
- Selected reclamation

Current Environmental Assessment

Planning

- Consultation
- Scientific and engineering studies
- Final Closure and Reclamation Plan

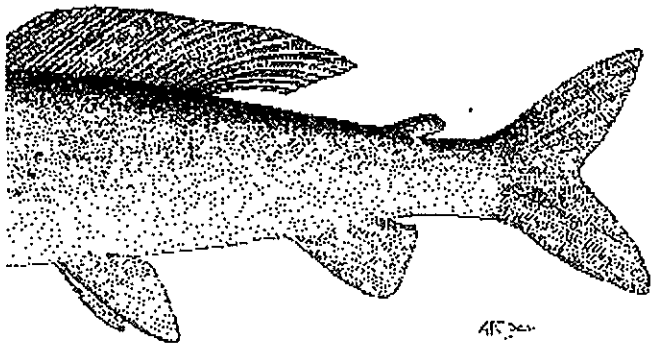
Deloitte & Touche

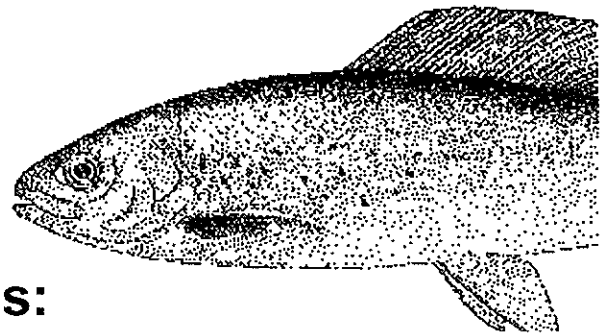
CEAA PROCESS

Deloitte & Touche

Environmental Assessment

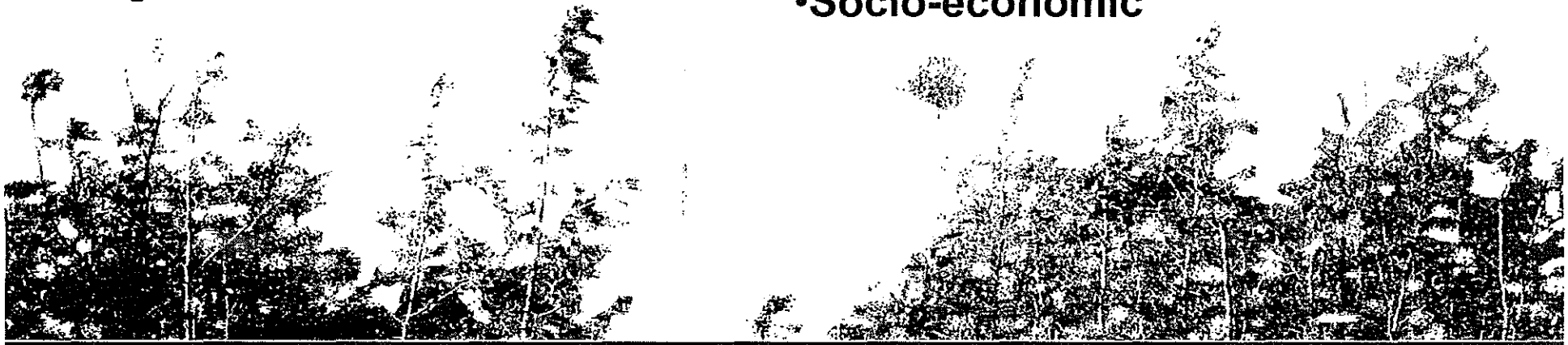
Scope under discussion





Current conditions:

- Fish
- Vegetation
- Socio-economic



Deloitte & Touche

Anvil Range Mining Corporation (Interim Receivership)

Environmental Assessment related to the Renewal of the Mine site Water Licence
Ross River Public Meeting, October 10, 2002

This document summarizes slides and posters presented during a community meeting held in Ross River, Yukon related to the renewal of the water licence for Anvil Range Mining Corporation (Interim Receiver).

Introductions

- Valerie Chort, Deloitte & Touche Inc., National Practice Leader, Environment Health & Safety
- Shannon Glenn, Manager, Deloitte & Touche Inc., Environment Health & Safety Services
- Leslie Gomm, Manager, Project Assessment, DIAND Environment Directorate
- Steve Morison, Gartner Lee Limited
- Wes Treleaven, Engagement Partner, Deloitte & Touche Inc.

Interim Receiver

Who is Deloitte & Touche Inc. and why are we here?

Mining and milling operations ceased in early 1998.

Deloitte & Touche Inc. was appointed Interim Receiver of Anvil Range Mining Corporation pursuant to an order of the Ontario Court (General Division) in April 1998.

• Studies commissioned by Deloitte & Touche Inc. and DIAND have indicated that it is not economically feasible to re-open the mine.

What is our responsibility?

• An Interim Receiver is a court officer who represents all parties who have an in interest in the administering of an estate.

• We oversee the management of the property under the terms of the Water Licences.

• Our mandate is specified in the court order and includes:

"to receive, preserve, protect, and realize upon the Assets"

"to apply for any permits, licences, approvals, or permissions on behalf of [Anvil Range] as may be required by any government or regulatory authority"

Who pays for these activities?

• The Government of Canada currently provides the necessary funding to support, maintain, and monitor the Faro site.

When do creditors get their money back?

• A Plan of Arrangement (Plan) for returning money to secured creditors has been negotiated and approved by the Ontario Court of Appeal. Approximately $9 million is available.

• The Interim Receiver is waiting for a potential appeal of the Plan to the Supreme Court before distributing assets from the Faro mine.

Care and Maintenance

How is the site looked after?

Who is involved?

• Operational personnel play a key role, under the supervision of the Interim Receiver.

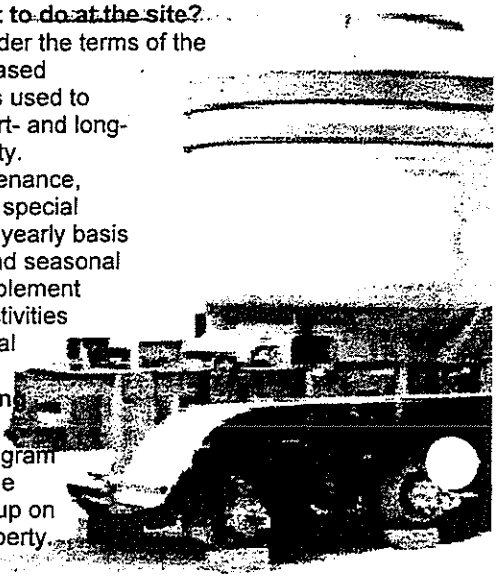
• Stakeholders include DIAND, Technical Advisory Committee, communities and other regulatory bodies such as Environment Canada and Department of Fisheries and Oceans.

How do we decide what to do at the site?

• The site is managed under the terms of the Water Licences. A risk-based management approach is used to identify and prioritize short- and long-term issues at the property.

• Routine care and maintenance, monitoring activities, and special studies are planned on a yearly basis

• Experienced full-time and seasonal operational personnel implement care and maintenance activities according to best technical practices.



Specifically, what is being done?

• The water treatment program has been enhanced on the Faro side, and is in start-up on the Vangorda side of property.

• Other site reclamation activities include hydrocarbon remediation and removal of hazardous waste.

• Dams and diversion structures are inspected and maintained.

So how do we know this is working?

• Monitoring requirements are dictated by the Water Licences. The Interim Receiver has increased the number of environmental monitoring points to those required by the licences.

• Environmental and geotechnical monitoring is carried out by site personnel, with the assistance of consulting firms.

• On-site laboratory results are confirmed by independent laboratories on a regular basis.

• Monthly and annual reports are filed by the Interim Receiver with the Yukon Territory Water Board.

• Regulatory agencies routinely visit the site to oversee care and maintenance activities and to provide input into new projects.

Special Projects

In addition to care and maintenance and routine monitoring, the Interim Receiver initiates special projects related to maintenance or site characterization.

What is the status of the Rose Creek Tailings?

• 54 million tons of tailings were deposited in the Rose Creek Valley during operations.

• A characterization study done in summer of 2001, in consultation with DIAND and Environment Canada. New monitoring wells were installed at 11 locations.

• The study revealed contaminants beneath the tailings deposit, but not down gradient of mine area.

Could we use Renewable Energy at this site in the future?

• An energy audit was conducted in 2001, and modifications made to the electrical system allowing significant energy cost savings.

• Also, a pre-feasibility of micro-hydro and wind-monitoring long-term options was conducted, indicating a number of possibilities.

• In 2002, Yukon Energy Corporation has initiated a windmonitoring program on the Grum Rock dump. A 30 m tower was installed in June.

Deloitte & Touche

How is the Fresh Water Supply Dam holding up?
- This dam, built in 1968, is located above the tailings.
- Studies in 2001 indicated that the dam is an integral part of the valley system. It also has a low-level pipe underneath it which has deteriorated over the years.
- To mitigate this risk, the Interim Receiver is planning to perform a two-stage remediation, including (1) the lowering of the existing spillway, and (2) the removal or remediation of the low-level pipe.

In 2002, studies are also being conducted, aimed at answering the following questions:
- What is the status of acid rock drainage on the mine site?
- What are the alternatives with respect to relocating the Faro and Vangorda Creeks?
- What is the stability of the Faro and Vangorda Pits?

Water Licence Renewal

How is the mine currently regulated?
- The property is managed under the terms of two Water Licences. These licences dictate the effluent discharge standards, maintenance requirements, monitoring and reporting requirements, and contingency planning and abandonment requirements.
- These licences expire December 31, 2003.

What is required to close this mine?
- The cost to remediate at this site is currently estimated to range between $200 to $500 million.
- Given the magnitude of costs and the importance of long-term environmental protection, an approved Final Closure and Reclamation Plan is required.
- This plan would be based on reliable information about all aspects of the property. Its parts would be integrated to ensure maximum environmental protection.

What is the Interim Receiver planning?
- The Interim Receiver has received approval and funding to apply for a renewal of the Water Licence.
- As a first step, we have submitted a Project Description which describes our intent to apply for a **combined five-year licence** for the property, which includes:
  - care and maintenance and protection of the environment.
  - Consultation with stakeholders.
  - Management of any emergency reclamation work on-site.
  - Continued selected reclamation of mine elements which are not integrated or linked to rest of the property from perspective of closure planning.
  - Scientific and engineering studies related to the preparation of a final closure and reclamation plan for the property.
  - Preparation of a Final Closure and Reclamation Plan.
- The Interim Receiver is the proponent on this project. DIAND is currently the exclusive funder of the proposed work.

CEAA Process
[Presentation by DIAND Environment Directorate]

Environmental Assessment
- The Interim Receiver is currently waiting for Guidelines that will set the scope for the environmental assessment.
- In response to the Guidelines, an Environmental Assessment Report will be developed.
- Currently identified base line information gaps have been identified around fisheries, vegetation and socio-economic conditions.

Contacts:

For information about the receivership, environmental management and long-term planning for the site:

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Deloitte Touche Tohmatsu

For information about the current CEAA and water licence renewal:

Deloitte & Touche

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Environment
Northern Affairs Program

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Environnement
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Canada

Deloitte & Touche

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Deloitte & Touche

Via Fax and Original Mailed

March 21, 2003

Chief Jack Caesar
Ross River Dena Council
C/O General Delivery
Ross River, Yukon Territory
Y0B 1S0

Dear Chief Jack Caesar:

Re: Anvil Range Mining Corporation Limited ("Anvil Range")
Traditional Use Study for Environmental Assessment Report (Water Licence Renewal)

This letter confirms that Gartner Lee Limited are in the process of finalizing arrangements with Ms. Doris Dreyer and Mr. George Smith to assist in the conduct of a Ross River Dena Traditional Knowledge Study for the Anvil Range Mine. The work is being done for the preparation of an Environmental Assessment Report on proposed "care and maintenance" activities relating to the renewal of the water licences for the Anvil Range property.

It is currently planned to carry out the interviews relating to this study over the course of next week.

We would like to express our thanks to the community for the willingness to participate in this study.

Yours very truly,
DELOITTE & TOUCHE INC.
in its capacity as Interim Receiver of
ANVIL RANGE MINING CORP.

per:

Wes A. Treleaven, CA • CIRP
Senior Vice-President

cc: Ms. Sheila Greer, Gartner Lee Limited
Mr. Stephen Morison, Gartner Lee Limited
Ms. Shannon Glenn, Deloitte & Touche

Map Search

EHS
- 1 ARMC Interim Receivership
- 2 Contact Information
- 3 EHS, TAC Reports and Data
- 4 Listing of Final Project & Study Reports
- 5 eRoom Reference Material
- 6 Collaboration Area
  - 1. Open Discussion Forum Anvil Range
  - 455-01 Fresh Water Supply Dam (FWSD)
  - 455-02 Environmental Maintenance (ENVMNT)
  - 455-03 Rose Creek Tailings (RCT)
  - 455-04 Renewable Energy (RNNRG)
  - 455-05 Risk Based Management (RBMGT)
  - 455-06 Vangorda Acid Rock Drainage (VARD)
  - 455-07 Vangorda Water Treatment (VWT)
  - 455-09 Water Licence Renewal (H2OLR)
    - 1. RFPs
    - 2. Communications
      - Baseline Table of Contents
      - Comments on EAR
      - Detailed vegetation sampling design and agency comments
      - Draft EAR
      - EAR Guidelines and scope of screening
      - EAR methodology
      - GLL Communication Records
      - H20LR-m-030802-Anvil Range_Agenda_April 14 17.doc
      - H20LR-m-030802-Anvil Range_Workshop

Ross River TK for EAR

a note created by Shannon Glenn on 13 Jun 03

Additional information regarding communication and consultation with RRDC can l found at Ross River Meeting October 10 2002 (which includes details of the techni non-technical review of the Project Description) and Ross River consultation (con

A conference call was held March 12 2002 regarding reaching an understanding re the collection of Traditional Knowledge from the community of Ross River that wc complement the information collected in 1999. Prior to the conference call, Shei forwarded to Shannon summary notes of the meeting (attached). Shannon Glenn, Greer, Doris Dreyer and George Smith were on the call. Sheila Greer is an indepe anthropologist working for GLL. An agreement in principle was reached that this collection of TK would proceed, tentatively during the week of March 24. Sheila attend part of the interviews and then Doris and George would complete the interviews. It was agreed that a Traditional Knowledge Protocol would need to be developed. SG met George Smith later that day in Whitehorse and provided topog maps of the area to be used for the interviews.

During the week of March 18, GLL, Sheila Greer and D&T worked on a draft protoc letter of understanding (see attached drafts). In particular, SG and Sheila held conversations on March 19 (resulting in a draft titled 'Re. Traditional knowledge a RRDC') and on March 20 and 21st. SG discussed the TK Protocol with Wes Treleave March 19. D&T is not a party of the protocol except as client on the EAR. On Mar Sheila received a request from Doris Dreyer for help regarding a research proposa attachment 'Cut and Paste of things are looking ok'). On March 21, Sheila sent a f then revised letter of understanding to Dr. Heyer Meyers regarding the work to be

Chief and Council were apparently informed regarding these negotiations (per att email). A confirmation letter to that effect was sent by D&T to Chief Caesar rega the IR's understanding that the Chief was aware that this agreement had been rea between GLL and Doris Dreyer.

Interviews proceeded during the week of March 24, with Sheila attending at the beginning of the week. Approximately 16 people were interviewed. Sheila was pr to meet with six individuals. They received honorariums paid out of the GLL White office the following week. See attached email 'Re. Ross River Report.msg'.

The results of the study were received from Doris Dreyer during the week of April (per attached email). It contained ex-post revisions to the TK protocol, whereby interview transcripts would not be available to Sheila Greer as well as a seven pa summary report. A follow-up call was held between Dr. Heather Meyers, GLL, an Dreyer on April 24, summarized in attached email.

Input from RR was included either in the Consultation section of the EAR in Volum (Section 3.4) or in Volume II of the EAR (primarily Section 2.9).

Regarding costs, a contribution agreement was set up between GLL and UNBC. Tl invoice was $6900 from Doris Dreyer. The invoice for George Smith is attached fo $5125 including fees and expenses. Other costs included honorariums for the interviewees.

Shannon Glenn and Leslie Gomm met with Chief in Council on May 6th to distribut EAR (three copies). Leslie mentioned that YTG EAU has money (approximately $6000) to help review the EAR. Shannon introduced the three volumes of the EAI

Agenda_FEB 20.doc
H2OLR-013003-m-Licensing strategies going forward.doc
Linkage with Project Team
Planning of Open Houses
Project Description Inputs
RERC meetings
Ross River TK for EAR
Water Board
Weekly Tuesday conference calls, starting July 30
3. Working Papers
4. Interim Reports
5. Discussion Forum
455-10 Faro Water Treatment (FWT)
455-11 Mass Loading Balance (MLB)
455-12 ESA Concentrate Load-out (ESACL)
455-13 Dam Safety Reviews 2002 (DSR'02)
455-14 Emergency Response Plan (ERP)
455-15 ARD study
455-16 - June 2003 Technical Workshop
7 D&T Workspace
8 Extranet Manager's Admin
Recycle Bin

in particular, focussed on the relevant sections of Volume 2 and 3 as described ab
meeting was held on May 7th with Doris Dreyer, George Smith, Shannon Glenn anc
Stephen Morison. The conversation was similar.

On May 30th, a conference call was held between Stephen Morison, Sheila Greer a
Doris Dreyer regarding concerns from Doris regarding completeness of informatior
provided in the EAR. Spefically, points raised included:

·Water quality testing in traditional areas of concern to the RRDC including the confluence of Anvil Creek and the Pelly River.
·Access to hunting areas beyond the security gates at the mine site.
·Overall effect of the tailings areas and safety concerns (e.g. open pits) for wildli migrate through the Anvil Range Mine Complex.
·The concern of litter such as barrels, rusty cables and other across the Anvil Ran complex.

A conference call between GLL, Sheila Greer and D&T was held on June 13th to re draft response.

Comments

Attachments

ross materials forwarded to D Dreyer .msg

methodology - interviewing.msg

Draft agreements

Correspondence with Dr. Heather Myers

cut and paste on things are looking o k .msg

are inform

letter of invitation & understanding Doris Dreyer.msg

Fwd letter of invitation & understanding Doris Dreyer.msg

Ross River Update.msg

Re ross report.msg

Fwd Faro TK protocol and report.msg

Sumi Conf Call- Mey D Drey

George's Invoice.msg

Ross River Dena Traditional Use Study

for the Faro Mine Water License Application (2004 to 2008)

Summary Report

Prepared for:

Gartner Lee Ltd.

Prepared by:

Doris Dreyer (UNBC)

Testloa George Smith (RRDC)

Date:

April 11, 2003

Background

Traditional Use Studies (TUS) are tools to gather First Nation people's knowledge to matters that relate to traditional activities. Among other tasks, this knowledge is vital to pursue informed decision-making on First Nation traditional lands. This TUS is a required part of the Environmental Assessment Report regarding the water license application (2004 to 2008) for the Faro Mine. The TUS was requested by Deloitte and Touche through the subcontractor Gartner Lee Ltd. The study was organized by Sheila Greer (Gartner Lee Ltd.) and carried out by Doris Dreyer (UNBC) and Testloa George Smith (Ross River Dena). The purpose of this study is to compile traditional knowledge of the Ross River Dena as it pertains to the care and maintenance of the Faro Mine. These information will be included into the Environmental Assessment Report prepared by Deloitte and Touche for the Faro Mine water license application.

Carry out of TUS

The interview participants were community elders as well as younger community members who traditionally and/or currently use the Faro Mine area. As the overall time frame for the study was limited to 15 days, only a limited number of people could be interviewed. The sixteen individuals who participated are elders Arthur John Sr., Alice John, Grady Sterriah, May Ladue, Don Taylor, Annie Ladue, Peter Ladue, Robert Etzel, Tom Smith, Tillie Smith, George Johnny and Eileen Johnny, and younger community members including Henry Dick, Arthur John Jr., Franklin Charlie and Jenny Caesar. With the exception of Peter Ladue and Robert Etzel, all elders have been interviewed in pairs, whereas all younger community participants where interviewed alone. The individuals were chosen for the interviews because of their particular knowledge of the Faro Mine area and their availability. Other individuals such as elder Annie Jepp and Charlie Dick, as well as younger land

stewards such as Gordon Etzel and Ted Charlie could not be interviewed because of the study's limited time frame.

The questions for the TUS were left broad to allow the participants to express all their experiences and concerns regarding the Faro mine area. However, as interviews progressed concerns raised by people were taken as point of reference for the following interviews with other study participants. If interviewees felt comfortable, the interviews were recorded, otherwise only notes were taken. Most interview participants used maps to pint out places of importance. The interviews were conducted by Doris Dreyer and Testloa George Smith. Sheila Greer attended the first three interviews to assist in the start up of the TUS.

During the interviews a broad range of information was collected, including information about hunting areas, sites were animals were taken, location of cabins and traditional place names. For the purpose of this report only information regarding the mine's care and maintenance are summarized. Part of this report is a map which outlines some of the areas of concern for interview participants. The areas of concern can be categorized into: first, tailings pond and spill way; second, pit security for animals; third, litter; fourth, water quality of creeks and lakes; fifth, access to hunting area; sixth, work for Ross River Dena; and seventh; decision-making power and information sharing between Ross River Dena and company/government.

1. Tailings pond and spill way

All of the interview participants stated that there were many animal tracks in the tailings pond and along the spill way coming down from the mill and entering the tailings pond below the mine entrance road. The interview participants voiced there concerns regarding the impact of the tailings on the animals, particularly moose. It

is known to the Ross River Dena that there were at least two dead moose found in the tailings pond during the time of mining operation. Furthermore, one interview participant reported that a moose taken by him near the mine six or seven years ago was very sick. It was in poor shape and showed discoloring of body parts.

Moreover, many interviewees stressed concerns about the high number of moose feeding along the spill way, which seems to be a favored spot for animals. These participants suggested that the area seems to be a mineral lick for moose. As this area is known to have been flooded several times with tailings, the interview participants are highly concerned about the impact of this site on the animals. Some interview participants suggested that the spill way area should be fenced, and studies conducted to investigate the impacts of the tailings and the spill way on the animals.

The tailings may have further impacts on animals and vegetation. During the interviews two community members stated that tailing particles are blown throughout the area. One participant mentions the dead trees surrounding the area as a sign for the impacts of wind blown tailings. Another interview participant noticed wind blown tailing dust on the ground, in the snow around the tailings pond and on the upper soil layer in areas adjacent to the mine (see map). This participant is especially concerned about the impacts of the tailings on the vegetation. Another community member maintains that the tailings are too heavy and therefore cannot be wind blown at all. Other interview participants stated that they spend not enough time in the area to give any comment to this subject. As there are some people picking berries and collecting plants in the area, it is necessary to clarify the impacts of wind blown tailings in the area.

2. **Pit security for animals**

Two interview participants pointed specifically to the danger of animals traveling through the mining area, especially the pits. One moose was reported having fallen into a pit (Vangorda or Grum). As sheep fail to recognize the newly made sheep trail around the mine, the animals are still traveling through the mine, and therefore are in danger being of insured.

3. **Litter**

The current hunters and trappers of the Faro mine area reported that despite past clean-up efforts, there are still barrels, cables and other items left in the bush (some are marked on map). These items are feared to cause danger to animals and water bodies. The litter is part of old exploration activities. Most of the barrels seem to be empty; however, there is at least one side where a half-filled sealed barrel is laying in a creek, slowly rusting, and another side where barrels are on the bottom of a lake. It is unknown if these barrels are empty. To avoid accidents, these items should be removed.

4. **Water quality of creeks and lakes**

The water quality is a major concern for the Ross River Dena. The interviews demonstrated that there is little knowledge about the actual water quality in the mining area. Some of the people are using certain creeks for drinking water (marked on map), others will not touch any water in the area at all. For the security of the people using the water in the area, there should be information made available to which creeks are good for drinking water. Moreover, changes in the water quality of any water body should be communicated to the Ross River Dena directly.

One interview participant feels that it would be crucial to locate one water testing side near the confluence of Anvil Creek and Pelly River. He maintains that contaminated water can travel long distances below earth before it surfaces. Therefore, the testing sites R4, R5 and R6 are not sufficient to ensure water quality of the down stream water bodies.

Except for one family, none of the Ross River Dena go fishing in the mining area because of unknown water quality and unknown effects of potential chemicals in the water on the fish.

5. Access to hunting area

Two elders were telling about how difficult it is for them to enter their hunting area as they cannot use ATV or snowmobile (equipment is too heavy). They tried to receive permission from the mine personal to access the haul road with their truck, but it was denied. These individuals would like to know if access could be given for hunting trips to the area. Other interviewees mention how too many people (Caucasian hunters) have access to the area though the mine road (leading from Faro to the mine), which increases hunting pressure.

6. Work for Ross River Dena

A couple interview partners stressed the need for more employment for Ross River Dena through the Faro mine. These interview partners felt that Deloitte and Touche has not made enough and/or sincere effort in employing Ross River Dena at the mine site. One interview participant described employment at the Faro Mine being restricted to a handful of exclusive people.

7. Decision-making power and information sharing between Ross River Dena and company/government

The Faro Mine is located on the traditional territory of the Ross River Dena. It is one of the two most important hunting, trapping and gathering areas of the Ross River Dena. Although the Ross River Dena have drastically decreased their activities in the Faro Mine area, it is still used on a constant basis[1]. However, the interviews demonstrated that there is a gap between the Ross River Dena and the care taker of the mine, Deloitte and Touche. Most people feel distanced from the day to day mine activities. There is little awareness to the work undertaken, the level of water and land contamination, or the security of taking animals in the mine area. When asked about the interviewees' perception of the health of hunted or trapped animals, they would mention that the animals look healthy. However, they also state that they are not sure about the actual health of the animals. Some people pray to God in order to ensure that the animal can safely be eaten; others plainly hope that the animal will be ok. One interview participant stated "I am taking moose there [Faro mine area] for five years and I haven't had any side effects. If it [contaminants] leaks they [company] will know and if they don't then it is too dam bad". In order to overcome the feeling of disconnection and helplessness, as well as to ensure an effective flow of information to traditional users of the area, it is necessary to include the Ross River Dena into decision-making processes at the Faro mine, and to build communication paths which allow traditional users of the area to practice safely their activities. To accomplish this task, protocols must be developed between the Ross River Dena and company/government which address these issues.

[1] These trips vary from day trips to up to 2 week long trips. The area is mostly used in fall and winter. The people using the area come from all parts of the Ross River Dena traditional territory.

Traditional Use Study – Ross River Dena
for Water License Application for
Faro Mine

TAY RIVER
105 K
EDITION 4 ÉDITION

Military users, refer to this map as: / Référence de cette carte pour usage militaire:	SERIES A 502 SÉRIE MAP 105 K CARTE EDITION 4 MCE ÉDITION

March/April, 2003

tailings (wind blown)

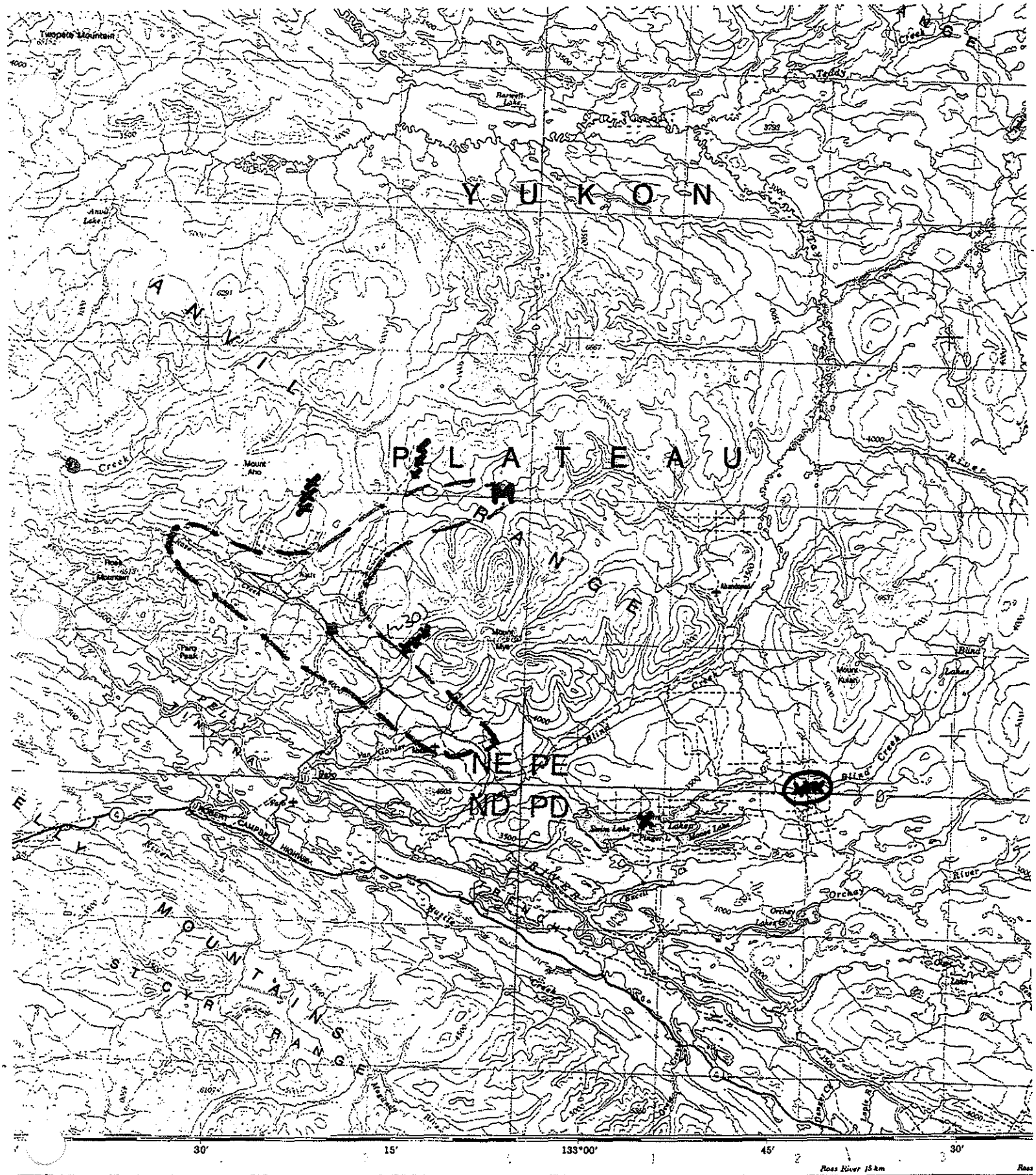
barrels

Sick moose shot 6-7 years ago

barrels with content

proposed water testing side

side for taking drinking water



CENTRE FOR MAPPING,
NES AND RESOURCES.
FORMATION CURRENT AS
1 1982.

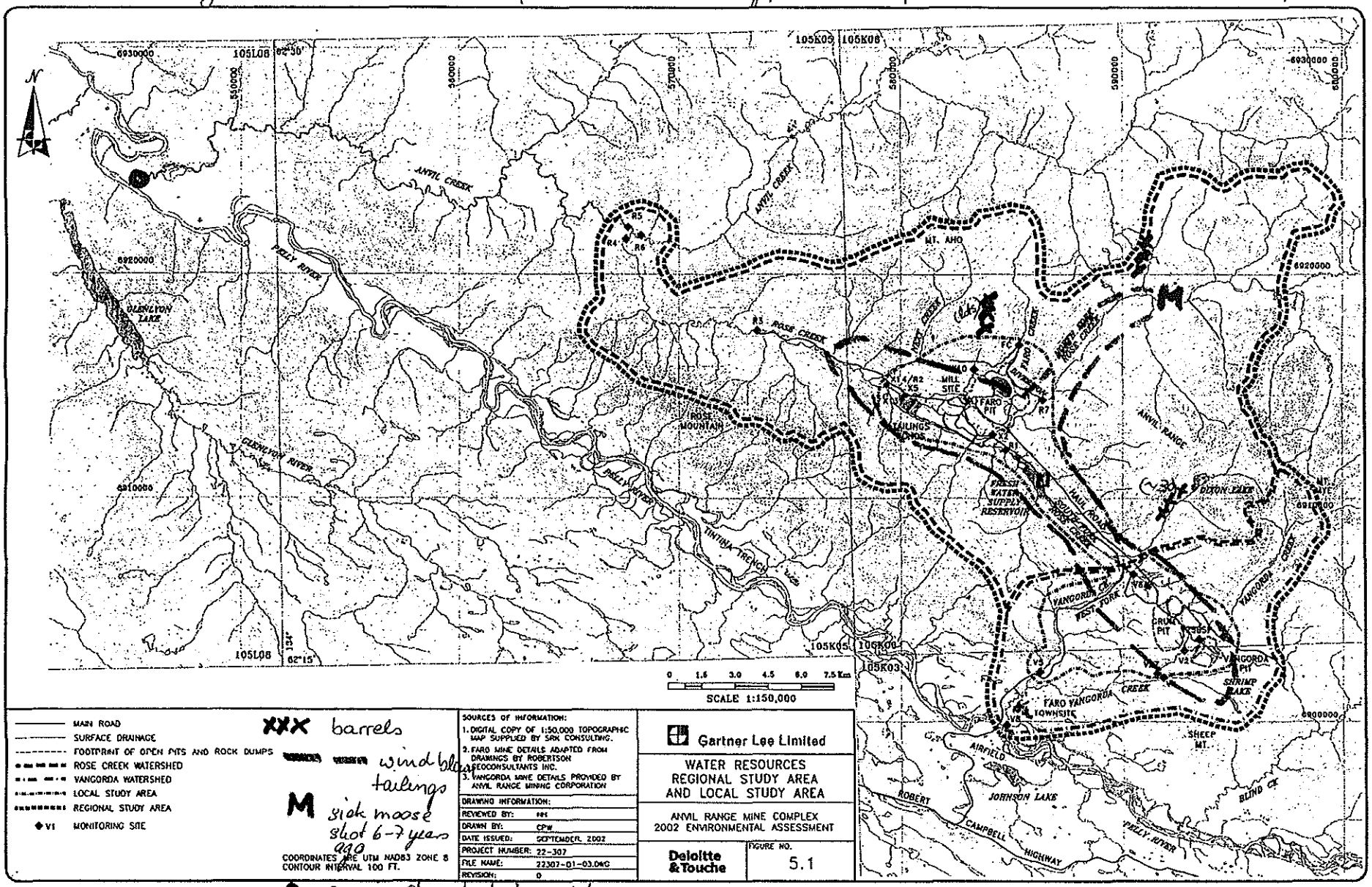
THE CANADA MAP OFFICE.

Information concerning bench marks and horizontal survey monuments can be obtained from Geodetic Survey, Canada Centre for Surveying, Ottawa

Pour tout renseignement concernant les repères et les bornes altimétriques, s'adresser aux Levés géodésiques, Centre canadien des levés, Ottawa

TAY RIVER

Traditional Use Study – Ross River Dena – for Water License Application for Faro Mine March/April 2003



MAIN ROAD
SURFACE DRAINAGE
FOOTPRINT OF OPEN PITS AND ROCK DUMPS
ROSE CREEK WATERSHED
VANGORDA WATERSHED
LOCAL STUDY AREA
REGIONAL STUDY AREA
◆V1 MONITORING SITE

XXX barrels
wind blown tailings
M sick moose shot 6-7 years ago

COORDINATES ARE UTM NAD83 ZONE 8
CONTOUR INTERVAL 100 FT.

SOURCES OF INFORMATION:
1. DIGITAL COPY OF 1:50,000 TOPOGRAPHIC MAP SUPPLIED BY SRK CONSULTING.
2. FARO MINE DETAILS ADAPTED FROM DRAWINGS BY ROBERTSON GEOCONSULTANTS INC.
3. VANGORDA MINE DETAILS PROVIDED BY ANVIL RANGE MINING CORPORATION

DRAWING INFORMATION:	
REVIEWED BY:	###
DRAWN BY:	CPW
DATE ISSUED:	SEPTEMBER, 2002
PROJECT NUMBER:	22-307
FILE NAME:	22307-01-03.DWG
REVISION:	0

Gartner Lee Limited

WATER RESOURCES
REGIONAL STUDY AREA
AND LOCAL STUDY AREA

ANVIL RANGE MINE COMPLEX
2002 ENVIRONMENTAL ASSESSMENT

Deloitte & Touche

FIGURE NO. 5.1

proposed water testing side
side for taking drinking water

Received April 4/03

Information Sharing Protocol

"Ross River Dena 2003 Faro Mine Traditional Knowledge Study"

Information Sharing Protocol, specifying the purposes to which Traditional Knowledge information [delete information], including Traditional Use data, shared by members of the Ross River Dena
community can be used by Gartner Lee Ltd.

Intellectual Property Rights

Ownership of any information collected by the project, as well as the concrete forms of this information (tapes, transcripts, labeled maps, summations, summary report) shall rest
with the Ross River Dena Council (RRDC).

Limitations

It is understood that the information assembled by this project shall not be construed to represent the sum or total of concerns that either the RRDC, or any individual RRDC member may or shall have concerning the proposed care and maintenance activities, recent operation, or historic development and operation of the Faro mine complex.

What Information Can Be Used?

-only information that the holder/source has indicated to the project that s/he wishes to have shared with the government via the E.A. report.
-only Traditional Use information that relates to specific current and historic land use activities in the Regional Study area.
-The source of Traditional Use information will only be identified if they approve.
-The location of land use activities (e.g., camp locations, kill sites, etc.) will only be identified if the knowledge holder so approves, and if requested, will be roughly rather than precisely located, e.g., within one km radius. [will not be identified, only sites of concerns will be mapped, Norman thinks that this passage should be taken out]
-only Traditional Knowledge information that relates to environmental concerns in the Regional Study area that are believed by the knowledge holder to be related to the Faro mine (past or current state).

For What Purposes Can Information Be Used ?

-only for inclusion in the Environmental Assessment report currently being drafted by Gartner Lee Ltd., for the purpose of a water license application, or for inclusion in the actual water license application.
-Gartner Lee's representative (Anthropologist Sheila Greer) will be responsible for integration of the traditional knowledge information in the E.A. report being prepared.

"Ross River Dena 2003 Faro Mine Traditional Knowledge Study"

Further Details

Background

Gartner Lee Consulting wishes to engage Ms. Doris Dreyer, affiliated with the University of Northern British Columbia, to assist in the documentation of traditional knowledge held by Ross River Dena members/citizens, specifically knowledge and concerns related
to or resulting from land use activities by Ross River Dena people in the Faro Mine complex area (Map Sheet 105K).
The work is being done for preparation for the Environmental Assessment" (E.A.) of proposed "care and maintenance" activities proposed by the Mine's Interim Receiver,

Deloitte & Touche Anvil Range Mining Corporation (Interim Receiver). The planned care and maintenance activities are being done in order to obtain a water license, as the existing water licenses expire December 31 2003.

"The information guidelines for the preparation of the E.A. Report" issued by DIAND (Environment Directorate) March 10, 2003, require that consideration of impacts to Traditional Use Activities be considered, where possible, in assessing the impact of the proposed care and maintenance activities. The guidelines specify as well that traditional knowledge concerns must be considered in arriving at the listing of Valued Ecological and Cultural Concerns (VECCs) under which the project's impacts will be evaluated. The project will build upon and seek to verify and update earlier efforts at documenting traditional land use activities in the Faro mine area, as well as environmental issues and concerns regarding the Faro mine, as documented by M. Weinstein, S. Greer, and others.

Permission, Ownership of Information

In engaging Ms. Dreyer to assist with this work, it is understood that:

□ Ms. Dreyer undertakes this project with the approval of the Ross River Dena Council.

□ Intellectual Property Rights: ownership of any information collected by the project, as well as the concrete forms of this information (tapes, transcripts, labeled maps, summations, summary report) shall rest with the Ross River Dena Council.

□ Any representative of Gartner Lee (e.g., Anthropologist Sheila Greer) that is involved in this project will sign a confidentiality form, acknowledging that s/he is witness and has access to privileged information, which shall be transmitted beyond her hands only in adherence to the agreed-upon Information Sharing Protocol.

□ It is understood that, as owners of the information, the Ross River Dena Council may chose to transfer ownership or give rights of use to any of the information collected and/or any of the concrete forms of this information, to others (e.g., the individuals interviewed, Ms. Dreyer, DIAND, etc.)

□ The Ross River Dena Council may chose to share the summary report that Ms. Dreyer will prepare on the project with Gartner Lee.

□ Future requests to access all or part of the information assembled as a result of this project shall be directed to the RRDC.

Limitations

□ It is understood that Ms. Dreyer will make a best effort to complete the above work, but no guarantees have been made on either the minimum number of interviews to be completed, nor the number of Ross River Dena community members consulted in the course of carrying out the project work.

□ It is understood that the information assembled by this project shall not be construed to represent the sum or total of concerns that either the RRDC, or any individual RRDC member, shall have concerning the proposed care and maintenance activities, recent operation, or historic development and operation of the Faro mine complex.

□ Should no concerns be reported in regard to the proposed "care and

maintenance" activities, this outcome does not in any way limits the concerns the RRDC or its members may have in regard to the Faro mine.

Deliverables

□ **To Ross River Dena Council:** originals of all tapes recorded and of all maps marked with land use data; typed transcript of English language portion of interview tapes; summary report on project. The summary report will include a list of RRD community members who participated in the study and a list of tapes recorded with tape identification number and names of speakers on each tape.

□ **To Collaborating Anthropologist (S. Greer)**: copy of typed transcript of English language portion of interview tapes; copy of summary report on project. [there is no need to give the transcripts to outside of the community]

□ **To Gartner Lee Ltd.:** a list of RRD community members who participated in study; a list of tapes recorded with tape identification number and names of speakers on each tape. Also a statement of time spent on project and expenses (pre-approved) requiring re-imbursement.

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Memo

Deloitte & Touche

Date: October 6, 2003

To: File

From: Shannon Glenn

Subject: Placeholder to another file

For comments by Ross River on EAR and response, see file titled "Comments on EAR"

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Memo

Deloitte & Touche

Date: July 20, 2003

To: File

From: Shannon Glenn

Subject: Meeting in Ross River, July 10 2003

Early in the week of June 30, 2003, Shannon had written to the Chief asking if he would like the Interim Receiver to visit the community before or after the TAC meeting, which took place on July 9 2003 in Faro. Subsequently, Wes had been telephoned on July 4 2003 by Mr. Stephen Walsh and was invited to attend in Ross River meeting on July 10 2003. Mr. Walsh is known to act on behalf of Kaska Nation in land claim negotiations. On July 10, Wes Treleaven, Dana Haggar and Shannon Glenn attended in Ross River at 1 pm. The meeting was held at the school and was scheduled as an agenda item during a community meeting, which was scheduled for the whole day.

Approximately 30 people were in attendance. Attendees included several elders, Kathleen Souza, Norman Steriah (sp?), Clifford MacLeod, John Etzel, Jenny Caesar, Chief Jack Caesar, Stephen Walsh, George Smith, Rod Snow (counsel), Victor Mitander, Norman (consulting biologist), and Jason Acklack. George Smith chaired the meeting.

The Chief started with opening remarks regarding the economic importance of the Anvil Range property to the Ross River community and the need to provide contracts for the people. Community members are always seeking annual and seasonal employment.

Wes was invited by the Chair to comment in reply. He presented the points indicated below, noting that these had also been presented the previous day during the description of care and maintenance activities during the Technical Advisory Committee annual meeting.

- ***Full time employment two individuals*** in water treatment area (Ron Nelly and Dean Bolton)
- FWSD: referenced the intended breach of the dam following the DFO directive. To minimize sedimentation, a ***seeding*** programme had been undertaken in late June 2003, which involved 5 Ross River individuals for twenty days. The work was well done and there will be a second seeding in late August/early September when the water level behind the dam has been further drawn down. There will also be a ***live fish transfer***, which will be undertaken under the responsibility of GLL (Bruce Ford). Fish from the reservoir will be transferred to a location approved by DFO.

- In general, there is work carried over from last year (delayed due to rain in July and August). This includes ***top dressing of the Intermediate and Cross Valley Dams***, which was prepared for last year. This work was undertaken in May 2003 by Tim Moon and involved four individuals. Tim is also scheduled to complete the ***refurbishment of the Faro Flume***, which had been previously planned for the previous year.

- The Interim Receiver met with John Etzel (Economic Development of Ross River Dena Corporation) and issued a contract to ***remove core samples*** from the sample shacks and organize them on skids. This involved four weeks of work.

- Tim Moon has been given a contract to ***remove the BXL and StanChem buildings*** and to remove the surrounding contaminated soil to the Faro waste rock dump. The Interim Receiver had given names of both Tim Moon and Clifford MacLeod to these companies in guiding their selection of contractors.

- The annual budget planning and approval process was described, as well as the advantage of the court process to secure funding. It was highlighted that the 2004 season will be a transition year because the water level in the Vangorda pit will have been reduced to the point where not pumping will be required. To ensure staff stability, the Interim Receiver is making suggestions to the government for projects that would be in harmony with closure planning. The biggest project for the next few years, subject to funding, would be ***building demolition***. Targeted buildings include the concentrate load out building, portions of the garage, etc... The Interim Receiver has met with the dean of Yukon College about the training of a team who would be responsible for building demolition. Required skills include rigging, steel handling, cutting, safety, etc... The Interim Receiver has written to Ian McGregor to obtain support to initiate the training programme this year.

- Other general initiatives mentioned include supporting a '***pool of labour***' concept to accommodate community members who require being absent for a period of time (including hunting season) and facilitation of ***accommodation***.

Wes also referenced the discussion, which took place at the end of the TAC meeting with the Project II Mines Project Team, including questions put to them by the Selkirk Renewable Resources Council representatives. One of the first objectives of the Type II Team is to meet with the affected First Nations to establish a process by which the closure planning process would be undertaken.

Norman Steriah subsequently spoke. He raised similar points to those raised by the Chief and highlighted the need for capacity building and the adjustment of employment policies. He also spoke of anger and disappointment. His overall tone was harsh. He expressed disappointment in the outcome of the traditional use study and asked Wes to explain the process that had been followed (which he did, see summary in eroom).

A coffee break was taken. During the break, Wes had a discussion with Norman, Dana with Clifford and Shannon with Jason. Jason is leaving mid-August to study to become an environmental officer. His replacement as a BRO has not yet been identified. Shannon highlighted the advantage of having that person identified by the time Leslie Gomm visits the community following the release of the draft screening report on the EAR in early August. During the break, Shannon also overheard a (loud) conversation amongst the two lawyers in attendance and some community members regarding the bi-

lateral agreement reached by the Premier with the Kaska Nation, which apparently references the need for consent for Type A water licences.

Following the break, George presented a high-level overview of the technical workshop, which had taken place on June 24-26, which had been attended by himself and Jason Acklack on behalf of the Ross River community. General questions were subsequently asked regarding the water licensing process and the closure planning process.

Following the meeting, Wes and Dana met with Kathleen Souza to discuss her interest in acting as a community liaison person. Dana and she will work out an agreement and submit to Wes.

Upon returning to Faro, Wes contact the Type II Team to describe the meeting.

Map Search
EHS
1 ARMC Interim Receivership
2 Contact Information
3 EHS, TAC Reports and Data
4 Listing of Final Project & Study Reports
5 eRoom Reference Material
6 Collaboration Area
1. Open Discussion Forum Anvil Range
455-01 Fresh Water Supply Dam (FWSD)
455-02 Environmental Maintenance (ENVMNT)
455-03 Rose Creek Tailings (RCT)
455-04 Renewable Energy (RNNRG)
455-05 Risk Based Management (RBMGT)
455-06 Vangorda Acid Rock Drainage (VARD)
455-07 Vangorda Water Treatment (VWT)
455-09 Water Licence Renewal (H2OLR)
1. RFPs
2. Communications
Baseline Table of Contents
Comments on EAR
Detailed vegetation sampling design and agency comments
Draft EAR
EAR Guidelines and scope of screening
EAR methodology
GLL Communication Records
H20LR-m-030802-Anvil Range_Agenda_April 14 17.doc
H20LR-m-030802-Anvil Range_Workshop

Detailed vegetation sampling design and agency comments

a note created by Glenda Fratton on 19 Aug 02

Attached is the detailed vegetation sampling design presented to YTG (Val Loewe and Environment Canada (Benoit Godin) on August 6, 2002 for consultation purpos Also attached are the consultation request letters to YTG and EC and their writte comments provided back to GLL.

Glenda

Comments

Results of vegetation study (Shannon Glenn, Deloitte & Touche, 12 Jun 03 10:04am)
A draft report of the metals in vegetation study was available March 2003. The results were summarized in the draft EAR and discussed at the April 3rd review of the draft EAR. It was also discussed, further to Dave Sherstone's suggestion, with Brett Hartshorne of the Contaminants Group. The report was shown and discusse but not left. The Human Health and Ecological Risk Assessment study, undertake during the summer of 2002, was not discussed.

Two conference calls were held April 11 and 15 2003 to discuss release strategy. During the first call, the objective was mostly to understand the context and purposes of both studies. A summary letter was prepared for the second call, containing the context discussed during the first call, proposed summary to be included in the EAR and a release strategy.

It was decided that the report would be summarized in the EAR, that Leslie Gomn and Shannon Glenn would distribute the EAR in person to Ross River and to Faro. This was done on May 6th 2003 with a meeting with Chief and Council as w as one with Dave Powers, CAO, Town of Faro.

A finalized version (April 2003) was provided by CE Jones Associates. Dave Sherst distributed the report to Environment Canada and Leslie Gomm to YTG Health. Written feedback was requested from YTG Health.

On May 2nd, the IR asked Environment Canada whether they would like a meeting discuss. This was declined, per attached emails. On June 2nd, Leslie and Shanno discussed that no feedback had been received from YTG Health. Both to follow-u

Attachments

Veg Sampling Design CE Jones 6Aug02.pdf
Anvil Range August 7_02 from V Loewen.doc
B Godin EC 6aug ltr.pdf
V Loewen YTG 6aug ltr.pdf
CKennedy ltr 2Aug02.doc
8aug02 e- from B.G veg revi comment

FROM BRETT HARTSHORNE
APRIL 3/4 2003.

Yukon Contaminants Committee

METALS OF CONCERN
FACT SHEET SERIES

ARSENIC

HIGHLIGHTS

Arsenic occurs naturally in rocks and minerals such as arsenopyrite.

Natural erosion, volcanoes and mining activities are potential sources of arsenic to the environment.

Microorganisms are able to transform inorganic arsenic to organic arsenic compounds.

Arsenic has been used both medicinally and as a poison for many years.

Arsenic may be ingested, inhaled or absorbed through the skin.

Both inorganic and organic arsenic can be excreted through the urine, however organic arsenic is considered less toxic because it clears the body at a much faster rate.

What is Arsenic?

Arsenic is the twentieth most abundant element in the earth's crust and is found in minerals of copper, lead, silver and gold. When combined with oxygen, sulfur and chlorine, inorganic arsenic salts are formed. These include the sulphide minerals arsenopyrite and realgar. Arsenic is also found naturally in the environment in organic compounds. These compounds are generally formed by bacteria in a process called methylation. Metallic or elemental arsenic is steel gray, brittle and rarely found naturally.

How does Arsenic enter the Environment?

Arsenic has several industrial applications; the most important is its use in chemically preserved wood. Ninety percent of arsenic used in Canada is made into the wood preservative chromated copper arsenate. Wood that has been treated with this chemical is referred to as pressure treated wood. Arsenic is also used in batteries, ammunition, light emitting diodes and in some electronics. Arsenic was used historically in fungicidal seed and crop insecticide treatments but these uses are no longer legal.

Some of the arsenic mineralizations in the Yukon are associated with gold ore deposits including those at Mount Freegold, Montana Mountain and Mount Nansen. Although natural erosion and weathering would release arsenic to the environment in these areas over time, mining activities may increase natural inputs. The DIAND Waste Management Program has remediated three sites, which involved capping the mine tailings. Ongoing studies are underway to measure the effectiveness of the caps in reducing arsenic input to the environment.

Is Arsenic Toxic?

At very high concentrations, arsenic can be toxic, even lethal, to a wide range of organisms. Crops once treated with arsenic fungicides decreased in yield and malformations have been found in amphibians around these treated areas.

Arsenic may be inhaled, ingested, or to a small extent, be absorbed through the skin. When inorganic arsenic is taken into the body, much of it (~80%) is changed to organic arsenic and excreted in the urine. Inorganic arsenic that is not transformed tends to concentrate in the hair, skin and nails during the first two weeks of exposure. After this, elevated levels may be found in the liver, spleen, kidney and muscle tissue.

Fish undergo a similar detoxification process through which the inorganic arsenic is changed to organic

Yukon Contaminants Committee

METALS OF CONCERN FACT SHEET SERIES

LEAD

HIGHLIGHTS

•Lead is a naturally occurring element and component of more than 200 minerals.

•Radiation shields in computer monitors and medical equipment, solder and lead-zinc batteries are a few products that contain lead.

•Combustion of fossil fuels, smelting and natural weathering of rock are the major sources of lead in the environment.

•Lead is persistent, toxic and can be "taken up" in the food chain. Many lead products have been phased out since the 1980's. As a non-essential element, we do not need lead in our diets to be healthy.

•Children are more susceptible than adults to the toxic effects of lead. A balanced diet of vitamins and minerals can reduce the toxic effects of lead.

•Lead is not found in Yukon country foods at levels of concern.

What is Lead?

Lead is a naturally occurring element and component of more than 200 minerals. The Yukon is host to various ore deposits that contain lead in their mineral composition.

Lead has had many uses in human history but hazards to human health have only recently been widely recognized. The Romans used lead to line city waterways and in glazes on food and wine containers. The Romans' chronic consumption of lead contaminated drinking water, other beverages and food may have resulted in widespread lead poisoning and contributed to the fall of the Roman Empire. Members of the fated Franklin Expedition to the NorthWest Passage in 1845 also may have suffered from lead poisoning. Their chronic exposure to lead would have come from solder that was used to seal tin cans of preserved food.

Metallic lead is a bluish-grey soft metal that has a low melting point. Its high density and ability to block radiation coupled with its resistance to corrosion and readiness to form alloys and chemical compounds have made it a useful element for several industrial products. (Also of note, lead is very easy to recycle. Approximately 55% of the lead products made in Canada contain recycled lead.) Lead is used in solder, leaded glass and crystal, ammunition, radiation shields in computer monitors and other medical equipment, batteries, radar, jet engine blades and fishing weights.

Many products that contained lead have been phased out globally in the past 2-3 decades due to new regulations in Canada and elsewhere. Lead solder for plumbing is no longer legal in new construction but may still be present in buildings older than 20 years in age. In 1978, lead-based paint was discontinued in Canada. Anti-knock agents in automobile gasoline that contained lead were eliminated in most countries in the western world by the mid 1980's.

Lead can be a formidable contaminant as it is persistent, toxic and can be stored in the tissues of plants and animals.

How does Lead enter the environment?

Natural processes such as rock weathering and erosion, volcanoes and forest fires contribute to significant releases of lead globally. Lead mining, smelting and refining operations and industrial and municipal effluents are major man-made lead sources. The predominant processes that release lead into the Yukon's environment are natural rock weathering and mine waste rock leaching.

Human activities releasing lead to the global environment were estimated in the 1980's to be 28 times that of emissions from natural processes. Since that time, global levels have decreased dramatically due to international agreements to eliminate lead from several products, especially gasoline.

Like other metals, lead dissolves more readily in acidic waters. Sulphide in rocks or mine tailings can react with oxygen and water to produce sulphuric acid. This can increase the acidity of the water surrounding the rock or tailings, dissolving lead and other metals. Drainage flowing from these areas may harm aquatic systems downstream.

Lead released to the atmosphere travels in air currents stuck to particles for considerable distances from the source. It is deposited on soil, surface waters and plants through rain and snow. Movement of lead from soil into groundwater will depend on the type of lead compound and the characteristics of the soil. Animals may consume lead when eating plants that have lead residues on them and plants may take in lead from groundwater.

LEAD

The lead may be stored in their tissues.

Lead has been used in pure form and as an alloy in lead shot and fishing tackle. If these recreational pieces are left in nature, waterfowl and other wildlife may be harmed when ingested.

Studies completed in the Yukon have not found elevated levels of lead from global sources. There is no concern at this time for lead contamination of Yukon traditional foods.

Is Lead Toxic?

Lead is a non-essential element in the human diet; we do not need to eat it to be healthy. Lead is not considered to be a carcinogen, however other toxic effects can be attributed to the excess intake of lead. Short-term effects include anemia, a decrease in the attention span and learning ability of children and increased blood pressure in adults. If one is exposed over the long-term, the risk of heart and kidney disease increases.

Most lead leaves the adult body a short time after short-term exposure. Children however are far more susceptible than adults to lead poisoning. It is important for everyone, especially children and pregnant women, to have proper nutrition. A balanced diet consisting of vitamins and minerals, especially calcium and iron, can lower the amount of ingested lead that enters the bloodstream. Good nutrition could effectively diminish toxic effects from lead.

Where to find more information/Internet Links

INTERNET ADDRESS	*WEBSITE ADMINISTRATOR*
www.contaminants.ca	Council of Yukon First Nations
www.inac.gc.ca/ncp	Indian and Northern Affairs Canada Northern Contaminants Program
www.esd.inac.gc.ca/nin	Indian and Northern Affairs Canada Northern Information Network
www.taiga.net	Arctic Borderlands Ecological Knowledge Society
www.ravenrecycling.homestead.com	Raven Recycling
www.renres.gov.yk.ca/environ/enactreg.html	Yukon Territorial Government Renewable Resources

References

Burns, B., Lendrum, B. Nordin, K. (1993). *Use, disposal and transportation of selected contaminants in Yukon. Report for the Committee on Contaminants in Northern Ecosystems and Native Diets.* 105pp.

Department of Indian and Northern Affairs. (1997). *Canadian Arctic Contaminants Assessment Report:* Jensen, J., Adare, K., Shearer, R. (Eds)

Gamberg, M. (2000). *Contaminants in Yukon Country Foods.* Unpublished report for Department of Indian and Northern Affairs, Northern Contaminants Program,Whitehorse, Yukon. 99pp.

The Yukon Contaminants Committee co-ordinates the Northern Contaminants Program for the Territory. The Committee's membership consists of representatives from Federal and Territorial Departments, the Council of Yukon First Nations, Yukon Conservation Society, and Yukon College. Since its establishment in 1991, the Committee has acted as a link between the scientific community and Northerners on contaminants issues. This publication was updated in March 2003. Please direct any comments to the Yukon Contaminants Committee 867-667-3283.

Yukon Contaminants Committee

METALS OF CONCERN
FACT SHEET SERIES

CADMIUM

HIGHLIGHTS

- **Sources of cadmium to the Yukon environment include erosion and weathering of local geology.**
- **Cadmium is used in batteries, protective metal coatings, pigments and stabilizers.**
- **Willow; *Salix artica,* is known as a cadmium-accumulating plant.**
- **A consumption guideline exists for organ meats in Yukon game. Caribou and moose continue to be monitored.**
- **Diets low in calcium, iron and protein and that are high in fat allow for higher absorption of cadmium. A balanced diet can reduce the amount of cadmium taken into the body from food and drink.**
- **Cigarette smoking is a significant source of cadmium in humans.**

What is Cadmium?

Sixty-fourth in abundance in the earth's crust, cadmium occurs naturally in Yukon lead-zinc minerals. Pure cadmium is a bluish-white soft metal.

Cadmium is conductive, bright in appearance and does not corrode easily. Most of the cadmium produced globally is used in nickel-cadmium batteries. Cadmium is also used in plastic stabilizers as it helps to protect PVC from decomposition by heat and light. Plastics, ceramics, glasses and enamels may be tinted with cadmium based pigments.

Some metal products are electroplated with a cadmium protective coating to slow down rusting. Cadmium is also used in soldering, dental amalgams, alloys, electronic devices, television picture tubes, mirrors, and in combination with tellurium, in solar cells for energy production.

How does Cadmium enter the environment?

In the North, less than 1% of loadings to ocean currents come from long range transport. As a result, inputs via natural weathering and erosion on land represent the primary concern.

When cadmium enters the environment, it can be taken up by plants. Concentrations vary by species and can be encouraged by certain environmental conditions. For example, willows are known cadmium accumulators. This may explain higher levels found in moose, caribou and beaver. Browsing by animals allows the transport of cadmium into the terrestrial food chain. Caribou, moose, beaver and other animals may accumulate cadmium as a result. There is a consumption limit guideline in the Yukon for specific animal organ meats. It is reproduced in a table on the back of this fact sheet.

Is Cadmium Toxic?

Cadmium is excreted by animals and does not biomagnify in the food web. The cadmium absorbed in the gastrointestinal tract is transported through the bloodstream and deposited in the liver and the kidneys where proteins bind with the metal. This may help to protect the animal from toxic effects.

Consumption of large quantities of organ meats may present a risk to humans. This is because more cadmium may be ingested than the body is able to flush out of the system. As a result, cadmium accumulates in the body which can lead to toxic health effects. It should be noted however, that exposure to cadmium through diet and environment are *minor* in comparison to intakes from cigarette smoking.

Although cadmium does accumulate in the liver and kidney of both animals and humans, it does not accumulate in the muscle tissue or meat. There is no consumption limit for the meat of Yukon wild game.

Long term chronic exposure of

CADMIUM

Health Advisory for Yukon Wildlife issued by Health and Social Services, Yukon Territorial Government

ANIMAL	Maximum # of Kidneys per year Recommended for Consumption	Maximum # of Livers per year Recommended for Consumption
Caribou		
Bonnet Plume	32	16
Nahanni	28	13
Porcupine	25	12
Forty-Mile	20	12
Wolf Lake	15	8
Finlayson	8	5
Tay	7	4
Moose	1	1
Sheep	178	No limit
Goat	382	26
Beaver	15	46
Porcupine	13	17
Snowshoe Hare	485	No limit

Where to find more Information/Internet Links

INTERNET ADDRESS	*WEBSITE ADMINISTRATOR*
www.contaminants.ca	Council of Yukon First Nations
www.inac.gc.ca/ncp	Indian and Northern Affairs Canada Northern Contaminants Program
www.esd.inac.gc.ca/nin	Indian and Northern Affairs Canada Northern Information Network
www.taiga.net	Arctic Borderlands Ecological Knowledge Society
www.ravenrecycling.homestead.com	Raven Recycling
www.renres.gov.yk.ca/environ/enactreg.html	Yukon Territorial Government Renewable Resources

References

Department of Indian and Northern Affairs. (1997). *Canadian Arctic contaminants Assessment Report*: Jensen, J., Adare, K., Shearer, R. (Eds.).

Gamberg, M. (2000). *Contaminants in Yukon Country Foods*. Unpublished report for Department of Indian and Northern Affairs, Northern Contaminants Program,Whitehorse, Yukon. 99pp.

Is Cadmium Toxic (cont'd)?

cadmium has been linked to kidney disease, lung damage and the development of less dense, fragile bones. Animal studies completed in the US have shown that more cadmium is absorbed into the body if the diet is low in calcium, protein and iron and high in fat. A balanced diet can reduce the amount of cadmium taken into the body from food and drink.

The Yukon Contaminants Committee co-ordinates the Northern Contaminants Program for the Territory. The Committee's membership consists of representatives from Federal and Territorial Departments, the Council of Yukon First Nations, Yukon Conservation Society, and Yukon College. Since its establishment in 1991, the Committee has acted as a link between the scientific community and Northerners on contaminants issues. This publication was updated in March 2003. Please direct any comments to the Yukon Contaminants Committee 867-667-3283.

Yukon Contaminants Committee

METALS OF CONCERN
FACT SHEET SERIES

SELENIUM

HIGHLIGHTS

- **Selenium is found naturally in the earth's crust.**
- **Selenium's greatest use is in electronic and photocopier components.**
- **Selenium is thought to mitigate the toxic action of mercury but high concentrations of selenium have negative health effects.**
- **As an antioxidant, selenium helps to prevent damage caused by oxygen to the body's tissues.**
- **Food sources of selenium include broccoli, onions and whole wheat.**
- **Selenium levels of concern have *not* been found in any Yukon country foods.**

What is Selenium?

Selenium is widely but unevenly distributed in the earth's crust. It is most often associated with copper ores but may be found with silver, lead and zinc ores as well. Organic compounds of selenium can be formed within plants, fish and animals.

Selenium is predominantly used in electronics and photocopiers due its semi-conductive and photoelectric properties. Glass, pigments, rubber, metal alloys, textiles, plastics, photographic emulsions, nutritional supplements, sheep and cattle feed additives, medical therapeutic agents and petroleum are products that may contain selenium. Perhaps the most commonly known product, aside from nutritional supplements, is anti-dandruff shampoo. Broccoli, onions, whole wheat, tomatoes, tuna, bran and wheat germ are natural whole foods containing selenium.

How does Selenium enter the environment?

In the Yukon, selenium is released to the soil by leaching and weathering of parent bedrock material. Fine dust particles may be swept away from the weathered surface source rock by wind and settle in other locations. Ground and surface water can transport selenium through the environment. Plants can absorb water-soluble selenium compounds from the soil and groundwater and transform them into organic compounds.

Some selenium may be released to the environment by human activities. Coal combustion, refining metal ores, especially copper, and leaching from waste containers are the primary sources of Selenium.

Is Selenium Toxic?

Selenium is an essential element in the diet at low levels. In the body, selenium acts as an antioxidant; it helps prevent damage to tissues by oxygen. Both inorganic (from minerals) and organic (from plants) forms can be metabolized; however the latter more efficiently. Selenium can be cleared out of the body to a limited extent in the urine, feces and breath.

Because selenium is a micronutrient, a deficiency in the diet may have harmful effects. The reverse is also true. Too much ingested, inhaled or absorbed through the skin can have negative health effects. Short-term low dose exposure may result in hair loss, muscle discomfort, skin rashes, swelling, nausea and fatigue. Higher short-term doses can lead to fingernail loss, changes in the nervous and circulatory systems and/or possible damage to the liver and kidneys. Long-term chronic high doses of selenium can trigger the buildup of fluid in the lungs leading to severe bronchitis.

Selenium is thought to have mitigating effects on the toxic action of mercury. Monitoring of foods for mercury in the Yukon has been combined with

SELENIUM

studying levels of selenium. Selenium elevated levels of concern have *not* been found in any Yukon country foods.

References

Department of Indian and Northern Affairs. (1997). *Canadian arctic contaminants assessment report*: Jensen, J., Adare, K., Shearer, R. (Eds.).

Where to find more information/Internet Links

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www.esd.inac.gc.ca/nin	Indian and Northern Affairs Canada Northern Information Network
www.taiga.net	Arctic Borderlands Ecological Knowledge Society
www.ravenrecycling.homestead.com	Raven Recycling Whitehorse, YT.
www.renres.gov.yk.ca/environ/enactreg.html	Yukon Territorial Government Renewable Resources

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Glenn, Shannon (CA - Toronto)

From: Dave Sherstone [sherstoned@inac-ainc.gc.ca]
Sent: April 15, 2003 6:43 PM
To: Glenn, Shannon (CA - Toronto)
Cc: Joanna Ankersmit; hugh.copland@gov.yk.ca; Marg.Crombie@gov.yk.ca; Brett Hartshorne
Subject: METALS IN VEGETATION STUDY - RELEASE OF INFORMATION

I've had a bit more time to look at the material you sent early this AM and think through the telecon discussions of this AM. Below are my further thoughts:

Important Questions to Answer
When public dissemination of the information begins there should be a direct answer provided to the question, "Who's going to die from this stuff?" In other words, what's the real impact of the information that will be transmitted?

The answer is, of course, "no one". The next question then will be, "So, what do these data mean to a person living in the area?" Given the data collected to date I don't think that question can be answered.

What is to be presented is, in laymen's terms, "a bunch of data". So it will be very difficult to avoid creating, at minimum, a sense of unease. This would argue for a very low key presentation of the "results' of the initial study and being able to present a plan to inform those present what steps will be taken to ensure there will be no deaths or long-term health effects. Or, alternately, what action will be taken should there be a risk to human health and/or the environment.

Relation to the Devolution Transfer Agreement (DTA)
While not specifically within the Receiver's mandate, both DIAND and YTG, and particularly the Type II Mines Project Office, must work within the framework of the DTA.

Sections 6.11 to 6.14 set out the standards to be used for environmental matters where there are hazards to human health and/or the environment. In order of priority these are: any existing federal standards, CCME Guidelines in conjunction their risk assessment framework and or/any federal standards, or, in the absence of the above, ... in a manner consistent with the risk assessment framework within the CCME Guidelines, in addition to standards in federal legislation pertaining to that type of hazard."

Need to Incorporate CCME Guideline Data in Public Report
From the above it is apparent that there is no "benchmark" in the material provided by Gartner Lee against which to measure the data provided in Tables 1 through 3. Before any release of the report (beyond the EAR) I recommend that either a separate table or additional columns to the original tables be added to show how the collected data relate to CCME or existing federal standards.

No Need to Repeat Chapter 7 CEAA EAR Information
I recommend that the Chapter 7, Adaptive Management Plan material not be included in any information package given to the affected stakeholders. Most will get this material with the CEAA review package. It's also not information that's especially important to convey at this time. You may wish to briefly sketch out how these data fit into the overall plan for adaptive management and where they will be used in developing the final abandonment plan, but this should be done more in the vein of background information rather than the first and largest portion of the information package.

Organizational Level at Which Information is Presented

As I noted on the teleconference, the presentation of preliminary, raw data should be handled in a low key manner. There is little that can be said about the extent, risk or impact based on the numbers collected to date. At this stage any information meetings should, in my view, be handled at the level within the respective organizations warranted by preliminary data. From Deloitte & Touche this would be best at your level, with the participation of the researcher responsible for data collection.

On the government side, a member from both the YTG and DIAND side of the Type II Project Office should also be involved. This is to ensure that questions over the parties ultimately responsible for clean-up are visible and able to respond to concerns about the longer-term.

Workplan/Next Steps
I've spoken to marg Crombie of YTG and she will discuss with her management. This has also been included as a separate agenda item for the April 16th Steering Committee Meeting. When I've received direction from the Committee I will relay it to you.

In going forward I'll be suggesting to the Steering Committee that the next steps are:

. Providing info to, and getting feedback from, YTG Health.
.. Preparing letters to the DTA-identified First Nations to accompany the release of the Gartner Lee paper,
3. Arranging suitable information sessions with the four First Nations identified in Section F of Appendix H of the DTA, the Town of Faro and other affected stakeholder groups,
4. Preparation of a suitable, brief, (joint?) media release,
5. Presenting more detailed information/updates at the July TAC meeting.

I'll update you again on Thursday.

Dave S.

Glenn, Shannon (CA - Toronto)

From: Howe, Lynda (CA - Toronto)
Sent: April 15, 2003 10:25 AM
To: Glenn, Shannon (CA - Toronto); 'Eric Denholm (E-mail)'; Chort, Valerie Jeanne (CA - Toronto); 'Stephen R. Morison (E-mail)'; 'bhalbert@senes.on.ca'; 'Joanna Ankersmit (E-mail)'; 'hartshorneb@inac.gc.ca'; 'hugh.copland@gov.yk.ca'
Cc: 'Daryl Hockley (E-mail)'; 'Dave Sherstone (E-mail)'; 'Marg Crombie (E-mail)'
Subject: Anvil Range EAR

Anvil Range EAR Draft Vegetati...

The attached is from Shannon Glenn.

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Via email to Distribution List Attached

Re: Anvil Range Mining Corporation ("Anvil Range")
Draft Proposed Release Strategy for the Metals in Vegetation Study

Dear All:

This letter is a follow-up to a conference call held April 11 2003 regarding the linkages between an on-going screening-level Human Health and Ecological Risk Assessment Study and Metals in Vegetation Study undertaken during the summer of 2002 for the Anvil Range Mine Complex. The purpose of that call was to discuss a release strategy for these reports as well as study follow-up requirements.

During that call, we had agreed to a follow-up conversation for April 15, 2003. To facilitate this discussion, we had committed to circulating the items listed below prior to the call. These items are in draft form and are only intended to provide a basis of our discussion for today:

- a written summary of the context, status, limitations and proposed release strategy for the reports (provided below);
- excerpts of the current draft of the Environmental Assessment relating to the renewal of the water licence for the Anvil Range property as they pertain to Metals in Vegetation Study. These excerpts, included as an appendix to this letter, include relevant sections of the Adaptive Management Plan, a proposed follow-up study and a summary of the results of the Metals in Vegetation Study and are included as an appendix to this letter.

Context of studies

The following two studies were undertaken in the summer of 2002:

- a Metals in Vegetation study was undertaken in support of the Environmental Assessment Report that is required for the renewal of the water licence for the Anvil Range Mine Complex. This was the first effort in collecting metals in vegetation as a component of the overall existing environmental conditions in the Faro area. Public meetings as part of the CEAA consultation process in Whitehorse, Faro and Ross River advised that this study was going to be undertaken.

- a screening-level Human Health and Ecological Risk Assessment (HHERA) is in the process of being completed. The need for the risk assessment was identified during a closure-planning workshop held in Vancouver in April 2002. The intent of the assessment was to identify pathways or contaminants which are not of concern with respect to aquatic species and conversely to identify those contaminants and/or pathways that need to be investigated further in a Tier 2 assessment. Additionally, the HHERA identified several areas which require investigation in future monitoring programs.

Both of these projects have been noted in the Interim Receiver court reports.

The status of these studies is as follows:

- the metals in vegetation study is essentially complete, pending final review by Deloitte & Touche. A summary of the results has been prepared for inclusion in the Environmental Assessment Report (EAR), which the Interim Receiver intends to file the week of April 22nd.
- the screening-level HHERA is a work-in-progress and, thus, has not been released.

Limitations of studies

- the metals in vegetation study was intended as a preliminary overview study to fill a gap in the existing environmental baseline information. In a general sense the results from this study shows higher than background levels of lead and zinc at some sampling locations in soil, lichen and vegetation. The scope of this preliminary study does *not* provide for the spatial extent of the presence and concentrations of metals in vegetation and soil, an identification of source area(s) of contamination and whether these source areas are still active and understanding of the environmental and health impacts of the presence of these metals.
- The preliminary screening levels HHERA focused strictly on aquatic pathways as there was no site-specific data available on contaminant levels in either the atmospheric or terrestrial environments. The HHERA relied on readily available data to assess exposure to humans. The time frame for carrying out the assessment did not permit interviews to be carried out of members of the local communities to take into account traditional knowledge and local dietary characteristics. As such, the dietary characteristics of the human receptors assessed in the study were based on a dietary survey of the Dene/Metis community in the Northwest Territories. In addition, the study inputs did not include the results of the Metals in Vegetation Study.

Release of results

The purpose of our discussion is to identify a release strategy for the results of these studies to provide 1) fair access to information, 2) appropriate context regarding certainty/uncertainty of results and their implication, and 3) proposed follow-up, including involvement of interested parties. A decision around the appropriate release strategy is constrained by the timing of the release of the EAR with likely distribution to stakeholders by YTG Environment Assessment Office in the middle of following week (approximately April 28th).

The following proposed strategy builds on the discussion of April 11, and is provided as a guide for the discussion on April 15th.

Regarding the EAR, it was decided to:

- include a summary of the results in the description of existing environment (Volume II of EAR), with prior review and input by the group
- include a proposed follow-up study in the Project Description (Volume I of EAR), with prior review and input by the group. The rationale to include this study as a care and maintenance study was driven by the fact that the current level of information does not allow the proponent to determine whether dust-control mitigation is required within the next five years. In this description of the follow-up study, it is proposed to reference the linkage to the on-going HHERA screening-level study.

In addition to the information included in the EAR, a two-phased release strategy is proposed:

- meeting with affected stakeholders on April 24th/25th or the week of April 29th. Affected stakeholders are defined as those who could potentially be affected from a human health perspective (e.g. local communities) or from a regulatory perspective (e.g. Environment Canada, Government of Yukon and/or federal health officials). Proposed meeting attendees would include representation from Type II sites (because of linkage to closure), Interim Receiver (because of linkage to care and maintenance) and appropriate technical support. While the need to meet within this timeframe is driven by the release of the EAR, a challenge will be to keep the conversations regarding EAR and Metals in Vegetation study in context. A key input around establishing the timing of these meetings is the date of the next Ross River Dena Council Chief-and-Council meeting.
- update to the TAC via regular TAC mechanisms including upcoming court-report (planned for early May) and the July 2003 proposed meeting.

During these meetings, it is proposed to provide a summary of the Metals in Vegetation study and an update on the status of the HHERA screening level study.

We hope that the enclosed material is helpful to you. Thank you in advance for taking the time to further discuss these matters with us today.

Yours very truly
DELOITTE & TOUCHE INC.
in its capacity as Interim Receiver of
Anvil Range Mining Corporation
and not in its personal capacity

Per:

Shannon Glenn
Manager, Environmental Services

cc. Wes Treleaven, Deloitte & Touche Inc.
Dave Sherstone, DIAND
Marg Crombie, YTG
Daryl Hockley, SRK

Enclosure: Appendix

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Excerpt from Anvil Range Mining Corporation (Interim Receiver) DRAFT 2004 to 2008 Water Licence Renewal Environmental Assessment Report (Volume I, Project Description)

7 ADAPTIVE MANAGEMENT PLAN

7.1 INTRODUCTION

7.1.1 OVERVIEW

The planning and prioritization of care and maintenance activities will be carried out according to the same model that has been followed since 1998. Specifically, care and maintenance objectives are driven by a risk based management approach that identifies short-term risks in any given year which need addressing.

Additionally, the care and maintenance program includes an adaptive management plan that provides a framework for responding to unforeseen events related to the degradation of previously developed mine facilities such as the Faro rock dumps, the Faro and Vangorda Creek Diversions, the Grum Pit, the Rose Creek Tailings Facility and the Grum Rock Dump. The adaptive management plan consists of monitoring requirements, triggers and either proposed actions or planning/consultations mechanisms for determining actions.

7.1.2 RISK BASED APPROACH TO MANAGEMENT PLANNING

Two key aspects of management planning and components of the risk based approach.

In order to fulfill their mandate to provide environmental protection and the water licence requirements to maintain all works in good condition, the Interim Receiver conducts an annual management assessment of all of the defined risk elements. This process identifies issues that may not present an immediate concern with respect to non-compliance but have the potential to require an action plan under certain circumstances or events. A risk-based approach is used, which ensures that two key aspects of management planning are provided:

1. All risk elements are included and assessed.
2. A standard methodology is applied to assess all risk elements according to likelihood and consequences such that a risk classification is assigned that ranks the risk elements from high to low priority.

The approach is as follows:

1. Identify and update risk elements: risk elements are identified, as well as potential risk-events.
2. Analyse risk: the risk of each event is analysed against a number of likelihood and consequence criteria and a risk classification is determined.
3. Evaluate risk and determine acceptability: the risk estimate is compared against the criteria for acceptability using the "ALARP" principle, whereby it is desirable to manage risk until it is "As Low As Reasonably Practicable".
4. Management Decision: Decide to accept or respond to the risk represented by each element.
5. Develop Care and Maintenance Plan: Develop and implement plans to manage immediate risks.
6. Develop Adaptive Management Plan: Develop an adaptive management plan to provide a response framework for possible future events of high environmental risk.

7.1.3 APPROACH TO ADAPTIVE MANAGEMENT

The AMP provides an approach to respond to unforeseen events. It must be linked to a monitoring program and requires active management.

The Adaptive Management Plan ("AMP") is a management tool that provides for a consistent and predictable approach to responding to unforeseen events. The AMP envisions an event that could happen, defines a response trigger and describes the general responses and the approach to the determination of appropriate responses that could be to be implemented. This provides the site manager with a pre-planned framework within which decisions can be quickly and efficiently made and provides regulators with the security of a consistent and predictable approach to unforeseen events.

The AMP provides an approach to respond to unforeseen events. It must be linked to a monitoring program and requires active management.

Since the actual details of an unforeseen event are, by definition, unknown, the AMP does not provide detailed description of responses. The AMP, rather, provides a description of a range of possible responses that are staged to varying degrees of severity of the event that has been envisioned.

To be effective, the AMP must be linked to a monitoring program that is designed to provide an indication of when a response trigger is activated. In this way, confidence is provided that the information necessary for possible activation of response triggers is gathered in a manner that is complementary to the AMP. For example, in certain cases, monitoring of water quality at certain locations, at certain frequencies and for certain parameters may be appropriate to initiate some response triggers while physical monitoring and observations may be appropriate to activate other response triggers.

Also, the AMP requires the active management of site conditions and a consistent management review of monitoring information. This ensures that the monitoring results are routinely and regularly checked for activation of response triggers on a schedule that is complementary to the AMP. For example, some events might quickly cause an adverse environmental effect and these require frequent management review of triggers while other events may be evolutionary in nature and require less frequent management review.

7.1.4 ADAPTIVE MANAGEMENT PLAN FOR THE ANVIL RANGE MINE COMPLEX

The general approach for the AMP for the Anvil Range Mine Complex is to provide, for a number of envisioned events, a staged response that accompanies an assessment of the severity of the event.

7.6 WIND DISPERSION OF TAILINGS RESULTS IN INCREASING ADVERSE EFFECTS ON THE TERRESTRIAL ENVIRONMENT

7.6.1 TRIGGER

Possible sources of wind dispersed contaminants and effects

The available information demonstrates that wind dispersed contaminants (i.e. heavy metals) are present in the terrestrial environment near the mine site. However, the data does not, at this time, clearly identify the source of the contaminants (i.e. tailings, waste rock, mining activities or emissions from the concentrator when operating, for example), the extent of their distribution, or whether the effects have increased, diminished or remained static through the care and maintenance timeframe (i.e. post-1998) in comparison to the operating period of the mine.

The trigger for implementation of contingency measures

The trigger for the implementation of contingency measures is proposed to be the results of studies of contaminants in the terrestrial environment described in Section 10.1. A study of environmental effects in the terrestrial environment is proposed that would be designed to identify the primary sources of contaminants in the terrestrial environment and whether the level of contamination is increasing, decreasing or static with time. This could include a care and maintenance mitigation plan

Specifically, the action trigger is proposed to be "mitigation measures that are recommended to be implemented in the 2005 mitigation plan,

based on the results of the 2002 and follow up studies of environmental contaminants in the terrestrial environment".

7.6.2 ENVIRONMENTAL CONSEQUENCES

While the environmental consequences of levels of contaminants in the terrestrial environment have the potential to cause adverse effects on wildlife and human resource users, it is not possible to quantify these effects at this time. There could be potential effects on socio-economic use, traditional/ cultural use and human health.

7.6.3 RESPONSE

Staged response

As per the general approach to the adaptive management plan, a staged response to increasing levels of contaminants in the terrestrial environment will be implemented if the response trigger is activated.

Mitigation measures will be proposed in 2005

The mitigation plan that is proposed to be developed by 2005 will recommend care and maintenance mitigation measures, if required during the 2004-2008 timeframe, that are based on the results of the 2002 and follow up studies and that will provide protection for the environment, socio-economic use of the land and human health.

7.6.4 MONITORING AND MANAGEMENT REVIEW

Collection of adequate monitoring information to activate the response trigger and review of the information

The type of monitoring information required is contaminant concentrations in vegetation and soils, contaminant concentrations in wildlife, health and diversity of the vegetation community, health and diversity of the wildlife community and traditional knowledge. The proposed studies that are described in Section 10.1 of this volume provides for the routine collection of this information by 2005 and this is considered to be adequate to provide the information required for activation, if necessary, of the response trigger.

A rigorous management review and interpretation of this information will be completed by 2005 as part of the mitigation plan that is proposed to be conducted, by 1995, as part of the project activities that are described in Section 5 of this volume. This is considered to be adequate management review for activation of the response trigger, if required.

Excerpt from Anvil Range Mining Corporation (Interim Receiver) DRAFT 2004 to 2008 Water Licence Renewal Environmental Assessment Report (Volume I, Project Description)

10 PROPOSED STUDIES

10.1 ASSESSMENT OF TERRESTRIAL EFFECTS RELATED TO THE FARO MINE COMPLEX

Metal concentrations in soil and vegetation are elevated relative to background concentrations

The 2002 study of contaminant concentrations in the terrestrial environment (C.E. Jones 2003) provided information concerning the presence of metals in some samples of soil and vegetation in concentrations that are greater than concentrations present at local background reference locations.

The 2002 study results complement local and traditional knowledge regarding the potential for metal contamination in the terrestrial environment. The 2002 study represents the first scientific study that attempts to quantify the degree and extent of metal dispersion and could be considered to be a "reconnaissance" level study. The following still needs to be understood: 1) detailed spatial distribution of observed concentrations; 2) whether the wind dispersion of contaminants is on-going or whether dispersion was restricted to past mine operating activities; 3) what the human health and ecological implications of observations are and, following from items 3 and 4 above, 5) whether short-term dust control mitigation is required while the FCRP is being developed and implemented.

A proposed follow up study of environmental effects in the terrestrial environment pertains to the proposed "care and maintenance" licence renewal because of: 1) the possibility that wind dispersion of tailings from the Rose Creek Tailings Facility is an on-going and current source of contamination; and 2) the consequent need to confirm whether or not short-term dust-control mitigation is required. This possibility is the focus of the study described here and is specifically included into the Adaptive Management Plan.

A multi-year study is proposed for continued investigation of the terrestrial environment

The follow up study program is proposed to be a multi-year study culminating in a characterization and mitigation report by the end of 2005, with annual updates circulated to interested parties and the Technical Advisory Committee. The exact scope of the proposed study and the detailed study workplan would be developed, based on both community and scientific objectives, prior to the initiation of

work in consultation with interested parties and with the Closure Project Team. The proposed objectives include:

Study objectives

1. Gather and use traditional knowledge throughout the study design, execution and reporting.
2. Determine and delineate contaminants in the terrestrial environment following from the indications of the preliminary (2002) study.
3. Estimate proportional contributions of contaminants from various possible sources, both historical and current (i.e. Rose Creek Tailings Facility, concentrator plant when operating, rock dumps, roads, etc.).
4. Compare the data collected to appropriate regulatory benchmarks and evaluate the data through the Human Health and Ecological Risk Assessment screening level study in order to determine the significance of the observed contaminant levels on the health of the land and users of the land.
5. Provide recommendations for short term mitigation measures.

Traditional knowledge program

The gathering and use of traditional knowledge would primarily be based on information provided through the Ross River Dena Council. The workplan would include field trips with elders and community members, coordinated design of the study parameters and routine discussion of results throughout the project.

Components of the characterization of effects

In addition to the traditional knowledge program, the characterization of effects is likely to include the components listed below.

1. Sampling of vegetation, including leaves, roots and lichen, and soil in locations that repeat key 2002 sample locations and that extend the area covered in the preliminary (2002) study; analysis for both metal concentrations and geochemical speciation to estimate the proportions of the total metal content that is bioavailable.
2. Sampling of air quality for determination of total particulate matter and metal concentrations in select particulate samples.
3. Sampling of tissues of mammals, likely to include both large and small mammals.
4. Interviews with Yukon Territorial Government staff, local outfitters and local recreational resources users.
5. Aerial or satellite imagery.

Study report

A study report will be prepared, proposed by the end of 2005, that provides all of the results of the study and recommendations for mitigative actions that will ensure the protection of the biophysical

environment, traditional land users and recreational land users in the short term while the FCRP is being developed and implemented.

Excerpt from Anvil Range Mining Corporation (Interim Receiver) DRAFT 2004 to 2008 Water Licence Renewal Environmental Assessment Report (Volume II, Existing Environment)

2.7.3.3. Metals in Vegetation

Study Objectives

A field program was conducted to determine if soils and plants near the mine have elevated elemental concentrations in comparison to background levels.

In 2002, C.E. Jones and Associates Ltd. designed and implemented a field program to determine if soils and plants in the vicinity of the Anvil Range Mine Complex have elevated elemental concentrations in comparison to reference levels from the Faro area (C.E. Jones and Associates Ltd. 2003). The study was intended primarily as a preliminary investigation to determine whether any identifiable airborne contamination of soils and vegetation has occurred as a result of mine development and operation. The sampling design of this study was based on the premise that the probable primary mine-site sources for airborne contaminants were the Rose Creek Tailings Facility, with contaminant delivery to off-site areas through dusting. However, it should be emphasized that there are additional potential dust-borne contaminant sources, including the mill/crusher site, concentrate load-out facility and open pits.

This study included reconnaissance-level sampling on areas adjacent or within both the Faro and Vangorda Plateau Mine sites, as well as more intensive sampling centred on the Faro (Rose Creek) tailings impoundments, and reference sampling. This study area is shown in Figure 27. The field component of the study was conducted on August 11-17, 2002. The sampling program included four primary components:

Four components of the sampling program.

1. Reference sampling (shown as black diamonds in Figure 27). Included nine (9) sample points to the southeast of the mine complex, from which 45 vegetation samples and 18 soil samples were collected.

2. Rose Creek Tailings Transect sampling (shown as purple triangles in Figure 27). Included 33 sample points centred on the Rose Creek intermediate tailings impoundment, from which 140 vegetation samples and 68 soil samples were collected.
3. Additional Mine Area sampling (shown as black stars in Figure 27). Included 17 sample points on the Faro and Vangorda mine sites, from which 57 vegetation samples and 8 soil samples were collected.

Composite foliar samples were collected at each sampling point.

At each sampling point, composite foliar samples were collected from scrub birch (*Betula glandulosa*), grey-leaved willow (*Salix glauca*), Altai fescue (*Festuca altaica*), and green reindeer lichen (*Cladina mitis*). On tailings transects, reference, and selected mine-affected sample points the following additional samples were collected: a root sample of grey-leaved willow; a surface soil sample (0-2 cm depth from soil surface); and a sub-surface soil sample (5-10 cm depth from soil surface).

Study Results and Discussion

Particular emphasis is placed on lead nad zinc in this discussion.

Although metals analyses were conducted on a suite of metals, summary results here focus on lead and zinc as they are primary metals associated with the deposits and those that were mined. In general, other analyzed metals (including silver, arsenic, cadmium copper, mercury and nickel) show similar trends in distribution but with less extreme variation documented.

With the exception of selenium (possibly marginally elevated), all elements in **soil samples** collected in the Swim **reference sampling location** are within published normal ranges (see Table 41). Analytical results for vegetation samples taken in the Swim Lake reference sampling site are presented in Table 41, and compared to cited levels for normal background elemental concentrations. The majority of reported results for elemental concentrations in vegetation at the Swim Lake reference area are within published normal ranges.

Table 1. Reference Vegetation Elemental Concentrations (mg/kg)

		Lichen (n=6)	Willow Foliage (n=7)	Willow Root (n=7)	Birch (n=7)	Cited Normal Background Concentrations
Silver	Range	-	0.01 - 0.03	0.01 - 0.05	0.01 - 0.02	0.03 - 0.5[a]
	Mean	0.01	0.01	0.02	0.01	
Arsenic	Range	-	-	-	-	0.009 - 1.5[a]
	Mean	1	1	1	1	
Cadmium	Range	0.02 - 0.13	1.16 - 6.13	0.61 - 5.72	0.02 - 0.15	0.03 - 0.5[b]
	Mean	0.04	2.73	2.04	0.10	
Chromium	Range	0.14 - 0.27	0.05 - 0.22	0.05 - 0.99	0.06 - 0.18	0.02 - 0.2[a]
	Mean	0.21	0.12	0.35	0.12	
Copper	Range	0.60 - 1.04	2.56 - 6.00	3.39 - 8.79	3.92 - 6.13	2 – 30[b]
	Mean	0.89	3.38	5.39	4.76	
Mercury	Range	0.01 - 0.02	-	0.01 - 0.04	0.01 - 0.03	0.01 - 0.4[b]
	Mean	0.01	0.01	0.02	0.02	
Nickel	Range	0.1 - 0.4	0.2 - 2.9	0.1 - 1.5	0.1 - 1.8	0.1 – 4[b]
	Mean	0.2	1.1	0.7	0.6	
Lead	Range	0.7 - 1.6	0.2 - 0.5	0.3 - 2.2	0.3 - 0.8	0.1 – 10[a]
	Mean	1.2	0.3	1.2	0.4	
Selenium	Range	-	1 - 2	-	1 - 2	0.002 - 2.9[a]
	Mean	1	1	1	1	
Zinc	Range	15 - 24	27 - 243	76 – 167	115 - 390	15 – 150[b]
	Mean	19	154	122	242	

[a] Kabata-Pendias, 2001 [b] Jones *et al.*, unpublished

Data from surface soil sampling show elevated elemental concentrations on the tailings transects in comparison to background data.

Data from **surface soil sampling** show higher elemental concentrations from the **Faro Mine Site transects** in comparison to the Swim Lake reference data. For all analyzed elements, mean concentrations and observed maxima are higher for the Faro Mine Site transect area than for the reference sampling area. Greater concentrations of lead and zinc (as compared to the reference data) are more widespread, and extend further from the intermediate tailings impoundment than other measured elements. Elemental concentrations in sub-surface soil samples from the Faro Site transect area were generally more similar to the Swim Lake reference concentrations and, with the exceptions of lead and zinc, were within published normal ranges.

Statistical analysis of vegetation sampling results versus background data shows no significant differences between sites.

Results of **vegetation** sampling on the **Faro Mine Site transects** are presented in Table 42. Statistical analysis of these data versus the Swim Lake reference data for vascular plants (willow and birch) shows no significant differences between sites, with the exception of nickel in birch foliage. Comparison of transect elemental

concentration means for vascular plants versus published normal levels (also means) indicates that the majority of elements in these samples were within normal ranges.

Locations where lead or zinc levels exceed published normal concentrations for willow and birch show were generally confined to the transects to the north to east of the Faro Mine Site, and/or directly adjacent to the mine site, or along the downstream Rose Creek drainage transect (note that all transect data for shrub species exceed the appropriate Swim lake maxima). To demonstrate this finding, concentration ranges of zinc in willow foliage in the transect samples are shown in Figure 28.

Lichen are valuable bioindicators of contaminants.

Lichen are susceptible to accumulation of airborne contaminants over time, and are valuable bioindicators of contamination (Conti and Cecchetti, 2001). Results presented in Table 42 for elemental concentrations in lichen samples on the Faro Mine Site transect area show higher concentrations for all elements, in comparison to the Swim Lake reference samples. The majority of elements are approximately one order of magnitude higher in samples from the transects than reference levels. Lead concentrations in the transects samples were approximately two orders of magnitude higher than lead in reference samples. Statistical comparison of Faro Mine Site transect elemental concentrations in lichen versus the Swim Lake reference data indicates that cadmium, chromium, nickel, lead, and zinc concentrations are significantly higher than reference levels.

The majority of elements from lichen samples are one order of magnitude higher on the tailings transect samples than background levels.

The spatial distribution of elevated metals concentrations in lichen samples on the tailings is similar to that in surface soil samples.

As would be expected, the spatial distribution of metal concentrations in lichen samples from the Faro Mine Site transects in comparison to Swim Lake reference site concentrations is similar to that in surface soil samples. The highest concentrations were located either at sample locations adjacent to the mine site, north of the tailings impoundments (transects 4 and 5) and downstream on the Rose Creek drainage (transect 3). This is illustrated in Figure 29, which show ranges of lichen lead concentrations on the tailings transects.

Table 2. Transect Vegetation Elemental Concentrations (mg/kg)

		Lichen (n=24)	Willow Foliage (n=31)	Willow Root (n=29)	Birch (n=31)	Grass (n=13)	Cited Normal Background Concentrations
Silver	Range	0.01 - 1.83	0.01 - 0.20	0.01 - 1.24	0.01 - 0.08	0.01 - 0.34	0.03 - 0.5[a]
	Mean	0.36	0.04	0.17	0.02	0.05	
Arsenic	Range	1 - 24	1 – 2	1 - 28	-	-	0.009 - 1.5[a]
	Mean	3	1	2	1	1	
Cadmium	Range	0.02 - 1.39	0.31 - 15.73	0.12 - 8.86	0.02 - 0.69	0.02 - 0.43	0.03 - 0.5[b]

		Lichen (n=24)	Willow Foliage (n=31)	Willow Root (n=29)	Birch (n=31)	Grass (n=13)	Cited Normal Background Concentrations
	Mean	0.37	2.82	1.81	0.12	0.12	
Chromium	Range	0.29 – 4.60	0.05 - 3.69	0.19 - 20.48	0.06 - 3.56	0.01 - 2.11	0.02 - 0.2[a]
	Mean	1.26	0.40	3.77	0.29	0.40	
Copper	Range	1.51 - 35.40	2.07 - 8.54	2.07 - 101.17	3.19 - 6.86	1.99 - 4.30	2 – 30[b]
	Mean	8.37	4.56	14.45	5.05	2.61	
Mercury	Range	0.01 - 0.51	0.01 - 0.03	0.01 - 0.51	0.01 - 0.05	0.01 - 0.04	0.01 - 0.4[b]
	Mean	0.09	0.02	0.06	0.02	0.03	
Nickel	Range	0.4 - 4.6	0.4 - 12.2	0.3 - 19.9	0.6 - 3.9	0.4 - 2.7	0.1 – 4[b]
	Mean	1.2	2.9	3.9	1.8	1.4	
Lead	Range	16.7 - 747.7	0.5 - 34.6	1.3 - 566.4	0.9 - 61.7	0.8 - 30.0	0.1 – 10[a]
	Mean	168.5	4.7	72.6	10.4	6.8	
Selenium	Range	1 - 5	1 – 3	1 - 3	1 – 3	-	0.002 - 2.9[a]
	Mean	1	1	1	1	1	
Zinc	Range	35 - 1043	52 – 828	58 - 802	107 – 656	11 - 143	15 – 150[b]
	Mean	232	231	252	301	78	

[a] Kabata-Pendias, 2001 [b] Jones *et al.*, unpublished

Bulk surface soil samples from the Vangorda Mine site indicate that elemental levels are comparable to background levels. Elevated concentrations for several elements are shown from the Faro Mine site.

In addition to the transects, surface **soils samples** (0-10 cm) were collected at two sample points on the **Vangorda Mine Site** (sites Van 7 and 8), and three points on near the **Faro Mine Site** (Faro 4, 5 and 7; see Figure 27). Results from the Van 7 sample (overburden capping near the Vangorda/Grum treatment plant) and Van 8 (undisturbed ground near the Vangorda/Grum treatment plant site) indicate that elemental levels are generally comparable to Swim Lake reference levels. Results from the samples taken at the Faro Mine Site (adjacent to the older tailings impoundments [Faro 4 and 7] or the concentrate load-out facility [Faro 5]) show higher concentrations (than reference) for several elements. Arsenic, copper, mercury, lead, and zinc concentrations in these samples exceed Swim Lake reference data and published normal ranges.

Results of lab analyses of vegetation samples show elevated elemental concentrations at potentially mine affected sampling points.

Results of laboratory analyses of foliar **vegetation samples** taken from these mine site areas are presented in Table 43. These results show that silver, cadmium, chromium, copper, mercury, lead, nickel and zinc concentrations in vegetation at these points are generally greater than Swim Lake reference concentrations for at least one vegetation species, and are within the reference range for other vegetation species samples. Lead and zinc are consistently greater than reference and publlished mormals, with maximum concentrations approximately two orders of magnitude higher than those at Swim Lake for lead and one order higher for zinc.

Table 3. Mine-Area Vegetation Elemental Concentrations (mg/kg)

		Lichen (n=6)*	Willow Foliage (n=12)	Birch (n=12)	Grass/Legume (n=12)	Published Normal Background Concentrations
Silver	Range	0.01 - 0.61	0.01 - 0.22	0.01 - 0.12	0.01 - 0.09	0.03 - 0.5[a]
	Mean	0.14	0.08	0.03	0.03	
Arsenic	Range	1 - 6	1 - 11	1 – 6	1 - 3	0.009 - 1.5[a]
	Mean	2	2	1	1	
Cadmium	Range	0.02 - 0.53	1.13 - 12.66	0.02 - 0.73	0.02 - 0.32	0.03 - 0.5[b]
	Mean	0.20	1.97	0.23	f0.14	
Chromium	Range	0.97 - 3.07	0.18 - 1.27	0.16 - 0.71	0.18 - 0.80	0.02 - 0.2[a]
	Mean	1.92	0.52	0.31	0.41	
Copper	Range	2.08 - 16.57	2.65 - 10.94	3.92 - 10.01	2.08 - 13.12	2 – 30[b]
	Mean	5.82	6.23	5.76	5.12	
Mercury	Range	0.01 - 0.04	0.01 - 0.07	0.01 - 0.13	0.01 - 0.06	0.01 - 0.4[b]
	Mean	0.02	0.02	0.03	0.02	
Nickel	Range	0.6 - 2.6	0.7 - 7.5	0.9 - 3.6	0.6 - 4.2	0.1 – 4[b]
	Mean	1.5	3.4	2.0	1.9	
Lead	Range	12.2 - 411.3	1.1 - 115.0	1.0 - 126.5	0.4 - 85.5	0.1 – 10[a]
	Mean	96.5	25.8	28.2	19.2	
Selenium	Range	1 - 2	-	1 – 3	1 - 2	0.002 - 2.9[a]
	Mean	1	1	1	1	
Zinc	Range	38 - 414	43 - 2350	126 – 1120	10 - 1040	15 – 150[b]
	Mean	120	607	478	173	

[a] Kabata-Pendias, 2001 [b] Jones *et al.*, unpublished

The highest and most consistently elevated elemental concentrations occur at points Faro 1,2,4,5,6 and at Vangorda 2 and 3.

Soils and vegetation data from individual sample points within the foot print of the mine (additional mine-area sample sites) show increased concentrations of metals (Faro 1, 2, 4, 5, 6 and 7 and Van 2 and 3). In some cases, sites had no live moss or lichen layer, and there was visual evidence of phytotoxicity (chlorosis).

It is worth noting that analytical data from the vegetation samples collected on revegetated till-capped sites (Van 6 and 7) showed only marginal or no elevation in elemental concentrations in comparison to reference data and published normals. This finding is supported by soils data showing concentrations similar to reference on one of these sites.

Glenn, Shannon (CA - Toronto)

From: Dave Sherstone [sherstoned@inac-ainc.gc.ca]
Sent: April 17, 2003 1:26 AM
To: Glenn, Shannon (CA - Toronto)
Cc: Joanna Ankersmit; Chris Cuddy; Robert Lauer; hugh.copland@gov.yk.ca; Marg.Crombie@gov.yk.ca
Subject: DIRECTIONS FROM TYPE II MINES STEERING COMMITTEE

The issue of dealing with the dissemination of the Faro health studies was raised at this afternoon's meeting of the Type II Mines Steering Committee, Chaired by YTG Deputy Minister Angus Robertson. The pertinent points for our telecon tomorrow morning are:

No Delay in Submitting the EAR or Licence Applications
There was no desire to see either of the above processes delayed. Deloitte & Touche should therefore proceed with all reasonable speed to submit the required documents.

YTG Environmental Health to be involved
A copy of the report is to be provided to the Type Ii Mines Project Office as soon as possible. Our office will transmit it to the YTG' Environmental Health Branch and seek its input.

No wider release of the document (aside from inclusion in the EAR) or meetings should be planned until input has been received from the Health Department.

Release of Information to be handled in a "Low-Key" Manner
Recognizing that the data are preliminary and putting them in context may be difficult at this time the Steering Committee expressed its desire to handle information releases and meetings in a low-key manner. To this end it was felt desirable to have the matter dealt with at the researcher/project manager level. If Deloitte & Touche visits Faro and Ross River the suggestion is that the "team" be you, Steve Morison, and Leslie Gomm from the Executive Council Office's Environment Branch.

By doing so it will reinforce that these are preliminary data, collected as part of the environmental assessment. This approach was suggested as a means of separating the roles of the EA practitioners from that of the Type II Mines Project team.

A point was raised about the involvement of the First Nations set out in the Devolution Transfer Agreement (DTA): namely that several of the FNs identified in Section F of Appendix H have not signed either claims or the DTA. As a result governments's obligations to the non-signatories are likely different that those FN's that are already self-governing and signatories. the Type II Project Office will be seeking further advice on this matter, bit it will likely have an impact on any discussion of funding requests received from FN's with differing status.

We can discuss this in greater detail during the teleconference.

Dave Sherstone

Glenn, Shannon (CA - Toronto)

From: Glenn, Shannon (CA - Toronto)
Sent: May 2, 2003 3:51 PM
To: Victor Enns (E-mail)
Cc: Dave Sherstone (E-mail); Stephen R. Morison (E-mail); Chort, Valerie Jeanne (CA - Toronto)
Subject: vegetation report

Vic,

I am following up on the vegetation study report, which I understand Dave Sherstone forwarded to you.

We were wondering if you would like to meet Dave, myself and Gartner Lee so that we could answer questions. We would be happy to do so. If so, would either Thursday the 8th at 4 pm or Friday the 9th at 9 am work for you?

Best regards, Shannon

Shannon Glenn
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Deloitte & Touche, Enterprise Risk Services
Risk Consulting and Regulatory Services/Environmental Services
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E-mail: <sglenn@deloitte.ca>

Glenn, Shannon (CA - Toronto)

From: Godin,Benoit [PYR] [Benoit.Godin@ec.gc.ca]
Sent: May 8, 2003 11:49 AM
To: Glenn, Shannon (CA - Toronto)
Subject: FW: Vegetation survey

Hello Shannon,
Following up with your telephone message, I have no substantial issue requiring a meeting on the vegetation report. I will be attending the meeting on Tuesday. See you there.
Thanks
Benoit

-----Original Message-----
From: Godin,Benoit [PYR]
Sent: Tuesday, May 06, 2003 2:35 PM
To: 'sglenn@deloitte.ca'
Cc: Sherstone,Dave: INAC
Subject: Vegetation survey

Hello Shannon
Vic has forwarded the report to my attention. I left a message on your answering machine yesterday but you may monitor your e-mail more easily.

I don't have much to say other than to identify the issue of lichen depression around the mine site component and soil contamination along the transect north and west of the tailings/ mine workings. Although these are interesting issues at this point in time the issue is more to prevent the tailings from contaminating the aquatic resources . Our suggested response to the problem has been known by the receiver for some time as EP and DFO has petitioned the Board for initiating the tailings removal into the faro pit.

As a comment on the report itself, I would like to have geo-positions of the sampling sites, and have the report available in electronic format to government for reference purpose.

Thanks

Benoit Godin
Environmental Protection
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Whitehorse, Yukon
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E-mail: benoit.godin@ec.gc.ca

COMPANION DOCUMENT
TO EAR

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Memo

Deloitte & Touche

Date: May 11, 2003

To: File

From: Shannon Glenn

Subject: Completion of the companion document to the EAR

The companion document to the EAR was first discussed at a meeting with Dave Sherstone, Marg Crombie and Leslie Gomm on March 10 2003. The purpose was to present a document that would allow reviewers of the EAR to place the EAR on care and maintenance in an appropriate context. A separate document allowed for wider circulation of the closure planning document if required and kept the concepts of care and maintenance and closure planning visually separate.

SG drafted a preliminary version of this document for April 4 2003, where it was reviewed in a preliminary way with the Project Team as well as with Leslie Gomm and Bill Slater. At the end of that meeting, it was agreed that the document was the responsibility of the Project Team and would be completed by them. An electronic version of the document was provided to Marg Crombie. During this meeting, it was agreed that the December 31 2006 timeline was still appropriate and could be referenced as such in the EAR and the water licence application.

A follow-up letter was sent to Dave Sherstone and Marg Crombie asking them to complete the document. Some comments were received on the document (email from Dave Sherstone dated April 22 2003).

Meetings were held on May 9 2003 with Dave Sherstone, Marg Crombie and Hugh Copland. The purpose of the meeting was to edit the document. The document was shortened considerably. The critique of the ICAP was removed. The role of the Interim Receiver was shortened to "linkage to the Interim Receiver". The document references that the timelines set out by the Interim Receiver will be "worked towards" but no specific reference is made to the 2006 deadline. No reference in the document is made to consultation, except for First Nations. The proposed studies were moved to an Appendix.

It was agreed that SG would further edit the studies in the Appendix and send the master copy to Dave Sherstone for the morning of May 12 2003. DS committed to reviewing by that evening. SG mentioned that she would have it reviewed by counsel to the Interim Receiver.

Records
H20LR-m-030802-Anvil Range_Agenda_April 14 17.doc
H20LR-m-030802-Anvil Range_Workshop Agenda_FEB 20.doc
H20LR-013003-m-Licensing strategies going forward.doc
Linkage with Project Team
Planning of Open Houses
Project Description Inputs
RERC meetings
Water Board
Weekly Tuesday conference calls, starting July 30
3. Working Papers
4. Interim Reports
5. Discussion Forum
455-10 Faro Water Treatment (FWT)
455-11 Mass Loading Balance (MLB)
455-12 ESA Concentrate Load-out (ESACL)
455-13 Dam Safety Reviews 2002 (DSR'02)
455-14 Emergency Response Plan (ERP)
455-15 ARD study
455-16 - June 2003 Technical Workshop
7 D&T Workspace
8 Extranet Manager's Admin
Recycle Bin

March 10 meeting (Shannon Glenn, Deloitte & Touche, 11 Jun 03 1:57pm)
A meeting was held with SG and Marg Crombie, Dave Sherstone, Leslie Gomm.

Agenda included:
1. Update on supreme court decision (not to hear the appeal)
2. Review of D&T's response to the Guidelines
3. Review of the TOC of the EAR
4. Discussion of the FWSD
5. Update on DS's-meetings with DFO/EC

It was agreed that, in addition to the EAR, a companion document would be subm EAR process by the Type Mines Office.

Meeting April 3 and 4th to review draft EAR and draft water licence applicatio Glenn, Deloitte & Touche, 11 Jun 03 2:08pm)
Details of a meeting are available regarding a meeting with the Project Team to r Draft EAR and the water licence application.

A follow-up letter sent subsequently to that meeting regarding the companion doc EAR was sent to Dave Sherstone and Marg Crombie.

Some emails are attached regarding subsequent correspondance relating to the de the companion document.

A meeting was held on May 9th with Dave Sherstone, Marg Crombie and Hugh Cop further edits. The document was left with the Type II Team to complete.

May 8 meeting re water licence application (Shannon Glenn, Deloitte & Touc 12 Jun 03 10:15am)
A meeting was held May 8 2003 with the Project Team to discuss further details o licence application.

Attachments

Anvil licence closure terms v.3.xls

H20LR-m-022003-Agenda re contingency and strategy meeting.doc

H20LR-l-021703-Dave Sherestone letter closure requirements.pdf

SUPPLEMENTAL MANAGEMENT DOCUMENT TO FARO LICENCE E A R .msg

VOICE MAIL SHANNOI GLENN O SUPPLEMEN REPORT.m

RE MEETINGS ON FARO RELICENCING.msg

master version of the document.msg

exact title request (urgent).msg

Re exact title request (urgent).msg

Completior the compar document tc EAR.doc

Map Search
EHS
1 ARMC Interim Receivership
2 Contact Information
3 EHS, TAC Reports and Data
4 Listing of Final Project & Study Reports
5 eRoom Reference Material
6 Collaboration Area
1. Open Discussion Forum Anvil Range
455-01 Fresh Water Supply Dam (FWSD)
455-02 Environmental Maintenance (ENVMNT)
455-03 Rose Creek Tailings (RCT)
455-04 Renewable Energy (RNNRG)
455-05 Risk Based Management (RBMGT)
455-06 Vangorda Acid Rock Drainage (VARD)
455-07 Vangorda Water Treatment (VWT)
455-09 Water Licence Renewal (H2OLR)
1. RFPs
2. Communications
Baseline Table of Contents
Clarification of baseline scope of work
Comments on EAR
Detailed vegetation sampling design and agency comments
Draft EAR
EAR Guidelines and scope of screening
EAR scoping and methodology
Fisheries feedback regarding study methodologies for EAR
GLL Communication

Linkage with Project Team

a note created by Shannon Glenn on 19 Feb 03

Conversation between Wes, Shannon and Dave Sherstone, in his capacity of Chair Team for Type II sites in Yukon.

1. Closure requirements: leaning towards option #2 outlined in Dave's letter datec 2003. Partial removal based on Eric's analysis of closure clauses in the licence. T included in EAR then in the Application to the Water Board.
2. Schedule: EAR by end of March, discussion with Project Team, which will be fo March, with a working session to iron out terms of the licence. Application to be thereafter, before screening report, in early April. Changes to application result screening to be handled through submission of additional schedules as an exhibit, hearing. Level of design detail in application will be comparable to what is in the EAR. DS referenced (and faxed) water licence regulations, section 6(1) (Applicati which supports the position that detailed design is not required.
3. Contingency planning: referenced 1) extensions given in past, 2) Dawson examp with due diligence case. Further need to discuss!
3. AR planning team reflection in licence: not discussed much but recognised nee soon.
4. Ross River: SG described intent to collect TK in March and the fact that they wi reviewing guidelines now. DS intends to discuss closure planning process in April/ will let them know that this conversation is coming. Hence, not necessarily a sch with them for March.

Action item: sent agenda to Wes, copied Dave for meeting tomorrow at Heenan Bl Murray, GLL, YTG and Ottawa. Received fax from Dave.

Comments

February 20 meeting (Shannon Glenn, Deloitte & Touche, 27 Feb 03 3:50pm)
At Heenan Blaikie.
Pre-meeting with: Marg Crombie, Tom Potter, Robert Lauer, Joanna Ankersmit, K Charnetski.

Discussed attached agenda.

Added Dave Sherstone and Chris Cuddy and GLL on the phone.
Conclusions:

- classify licence closure clauses into remove and set-aside. To be discusse and the application. Need to be specific rather than general because that expectation of the level of detail for the application. We need to avoid a we surprise stakeholders at the end.
- schedule/contingencies: Dave Sherstone to get back to us with respect to
- contact with the Water Board: Murray Leitch to write a letter introducing council and describing intended timing of application. Letter to be cc'd to
- application to be done in mid-May. Discussion weighed pro of applying ea really start the clock?) vs. applying later where modifications to applicatic substantial. Applying early (early April, without supporting technical docu before the completion of the draft screening) would require modifications at a later date to address these deficiencies. Risk of antagonizing Board a

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Memo

Deloitte & Touche

Date: June 12, 2003

To: File

From: Shannon Glenn

Subject: Development of the Companion Document to the EAR

This file contains working papers related to the development of the companion document to the EAR, titled Closure Planning Project Management, June 2003, as well as the final version of the document itself.

This document was submitted by the Type II Mines Project Office to Leslie Gomm, Environmental Assessment Unit. It was developed with initial help by Deloitte & Touche Inc.

Additional working papers regarding interactions with DIAND Ottawa and the Type II Mines Project Office can be found in the file titled "Liaison with Ottawa and the Type II Mines Project Office'.

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Deloitte & Touche

April 8, 2003

Via Fax

Ms. Marg Crombie
Environmental Manager
Yukon Economic Development
Oil and Gas Pipeline Unit
P.O. Box 2703
Whitehorse, Yukon
Y1A 2C6

Mr. David Sherstone
Team Leader, Type II Mines Project Office
Department of Indian and Northern Affairs
419 Range Road
Whitehorse, Yukon
Y1A 3V1

Dear Marg and Dave:

Re: Anvil Range Mining Corporation ("Anvil Range")

We would like to thank you again for taking the time on April 3rd and 4th to review our draft Environmental Assessment Report ("EAR") relating to the renewal of the water licence for the Anvil Range property, as well as to discuss the related upcoming application to the Yukon Water Board.

Further to that meeting, we understand that it will be the responsibility of the Project Team to edit and finalize the Closure Planning Management Structure document, which we reviewed together during our meeting. As discussed, the intent behind this document is to complement the EAR submitted by the Interim Receiver.

Our intent is to submit the EAR to the Yukon Environmental Assessment Office on April 18, 2003. As we refer to the Closure Planning Management Structure within the EAR, it is important that it be filed within a week thereafter. We would be grateful if you could let us know whether the Closure Planning Management Structure document will be ready for our review on or before April 18, 2003. Reviewing it by this date would allow time for our review, as well as revisions and production of the document by the Project Team so that it can be filed within the agreed upon appropriate time frame

Thank you for your attention to this matter. We look forward to hearing from you. Please let us know if we can be of additional assistance.

Yours very truly,
DELOITTE & TOUCHE INC
in its capacity as Interim Receiver of
ANVIL RANGE MINING CORP.

Per:

Shannon Glenn
Manager, Environmental Services

c: Wes Treleaven
Joanna Ankersmit
Stephen Morison

Anvil Range Mine Complex
Closure Planning Project Management
June 2003

Yukon Government

Canada INAC

Type II Mines
Project Office

Anvil Range Mine Complex
Closure Planning Project Management

Submitted by the

Type II Mines Project Office

as a companion document to

Anvil Range Mining Corporation (Interim Receivership)
2004-2008 Water Licence Renewal
Environmental Assessment Report

June 2003

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1. PURPOSE

This document outlines the project management structure for closure planning for the Anvil Range Mining Complex. It is designed to accompany the Environmental Assessment Report ("EAR") submitted by the Interim Receiver of Anvil Range Mining Corporation ("Anvil Range")[1] for the renewal of the water licences for the Anvil Range Property, which expire on December 31 2003.

This document outlines:

- the Federal and Yukon government's commitment to closure planning for and remediation of this the Anvil Range site;
- the need for updating of previous closure planning exercises;
- current closure planning information gaps; and
- the current management approach for closure planning.

2. WATER LICENCE RENEWAL PROCESS

Background

In January 2003, at a Technical Advisory Committee ("TAC") meeting held by the Interim Receiver, in Whitehorse, it was announced, on behalf of DIAND and the Government of Yukon, that the two governments recognized that the Faro mine was not going to reopen and that closure planning would become the responsibility of a joint government project team.

As such, the project submitted by the Interim Receiver to the DIAND Environment Directorate, to initiate the CEAA review for the renewal of the water licence for the Anvil Range property, was scoped to care and maintenance activities for protection of the property and the environment. This revised scope was described in the Guidelines for the EAR written by the DIAND Environment Directorate, in consultation with the Responsible Authorities, the RERC, First Nations, stakeholders and the public, and provided to the Interim Receiver March 10, 2003. The Interim Receiver submitted its' EAR to the Yukon Government, Executive Council Office[2] on April 29, 2003.

The Guidelines stated:

> "The scope of the project for this assessment includes the physical works and undertakings in relation to the care and maintenance and related activities of the Anvil Range Mining Complex during the period of the proposed 5 year water licence. This must include the principal undertaking and any accessory activities or physical works that are directly linked to, or interconnected with, the principal project. In this case, the physical work is the actual mine site and the principal undertaking in relation to that physical work is the care and maintenance, new activities/undertakings, adaptive management program, ongoing studies and other accessory activities."

---

[1] Deloitte and Touche Inc were appointed Interim Receiver of Anvil Range pursuant to an order of the Ontario Court (General Division), now the Superior Court of Justice, on April 21, 1998.

[2] The responsibility for the completion of the environmental assessment screening was transferred to the Yukon Government, Executive Council Office, Environmental Assessment Unit on April 1, 2003.

The project scope did not make reference to closure planning and was not discussed by the Interim Receiver in the EAR. This is consistent with the announcement made in January 2003, which indicated that development of the Final Closure and Reclamation Plan (FCRP) for the Anvil Range mine site would be the ultimate responsibility of a joint government project team.

3. CLOSURE PLANNING

3.1 NEED FOR CLOSURE PLANNING

Advances in knowledge and experience in mine reclamation technology, the complex nature of the environmental issues at the Anvil Range site, identified information gaps and the current wide range of closure options and costs that have been proposed for this site argues for a review and re-evaluation of previous abandonment options.

The linkages among many site components and associated closure alternatives highlight the difficulties that would be encountered if major closure measures on selected parts of the site were implemented in the absence of an overall plan. That consideration was behind earlier requirements for a fully integrated, comprehensive plan, and is imperative in planning for a new Final Comprehensive Reclamation Plan.

Licence requirements around closure and abandonment have been integrated in successive amendments to Anvil Range's current licences and, as a result, are of a piecemeal nature. There have been four closure plan documents[3] for the Faro site, none of which have undergone regulatory review and approval; nor have they undergone an environmental assessment. However they do contain valuable characterization information upon which closure planning can build.

Initial closure plans for the Vangorda and Grum sites were provided in the 1989 Initial Environmental Evaluation and Water Licence Application documents and underwent an environmental assessment screening at that time.

These previous abandonment options need to be reassessed in an integrated fashion to ensure that 1) they are internally consistent; 2) environmental protection is maximized by including the most recent technological advances in the closure options and 3) they are cost-effective.

[3] The closure planning documents for the Faro site include:

- Faro Mine Tailings Abandonment Plan, prepared by Klohn Leonoff Consulting Engineers, 1981;
- Abandonment Submission: Summary report, prepared by Curragh Resources, 1988;
- Down Valley Tailings Abandonment Plan, prepared by SRK for Curragh Resources, 1991; and
- Integrated Comprehensive Abandonment Plan (ICAP), prepared by Robertson Geoconsultants Inc., 1996, for Anvil Range.

3.1.1 SCIENTIFIC AND TECHNOLOGICAL ADVANCES

Since the 1996 ICAP was prepared, industry has gained significant experience in implementation and monitoring of mine site closure measures. Examples of some of the key developments include:

- An assessment of the feasibility of tailings relocation (and reprocessing) completed shortly after the 1996 ICAP. Experience elsewhere has shown the importance of considering the water treatment costs associated with any relocation or disturbance of tailings materials.
- The performance of soil covers has been an active field of research and rigorous assessments are now available for a number of sites (e.g. Equity Silver in British Columbia, Cluff Lake in Saskatchewan).
- The performance of sulphide cells has been assessed at other properties, and serious concerns have been noted. (e.g. Samatosum in British Columbia, Mt. Muro in Australia)
- Passive water treatment measures have been shown to be effective for treating low zinc levels in pit lakes (e.g. Island Copper in British Columbia)
- Backfilling of waste rock to pits has been shown to be cost competitive with long-term treatment at other sites, and preferable because it avoids the creation of a contaminated pit lake (e.g. Ronnenburg in Germany, Flambeau in Wisconsin).

These experiences allow a better assessment of the effectiveness of several alternatives contained in the 1996 ICAP. Furthermore, there have been several additional studies and monitoring programs at the Anvil Range sites that provide additional insight. Examples include:

- Site monitoring and seep survey data now provide a much better basis for understanding the site's waste dump water quality. Experience from other sites has led to improved understanding of how such data can be used to predict future trends.
- A detailed investigation of the groundwater regime in the Rose Creek tailings basin was completed in 2002.

3.1.2. INFORMATION GAPS FOR FINAL CLOSURE PLANNING

The significant gaps in the 1996 ICAP, which must be addressed prior to implementation of closure measures include, but are not necessarily limited to:

- Whether all of the waste dumps will eventually generate acid drainage. A particular concern is the effectiveness of the sulphide cells in isolating acid-generating waste rock;
- Insufficient knowledge of dump drainage paths and water balances;
- Evaluation of alternative tailings closure measures for the Rose Creek tailings aquifer;
- Geotechnical investigations for site selection, design and construction of facilities such as the Faro water treatment plant, the Plug Dam, spillways or re-routing of the major creek diversions;
- Detailed engineering for construction of physical facilities;
- The level of success that can be achieved by implementing some of the proposed closure measures (e.g. to control metal loading for flows into the Faro or Vangorda pits);
- Costing based on more detailed engineering, the availability of actual field data, and data on actual costs for implementing similar measures at other sites.

Specific information gaps in the 1996 ICAP are presented in Tables 3.1 to 3.3 with respect to water flow, water chemistry, and geotechnical/engineering issues.

Table 3.1 - Knowledge Gaps with Respect to Hydrology and Hydrogeology

Topic	Description of Knowledge Gap
Water balance	• Including surface and groundwater for final design of the water treatment facilities (plant, ponds, water collection systems). For example, at Faro, it is unclear where the water infiltrating into the dumps eventually discharges. It is not evident from seep surveys and monitoring at the toe. Possibly it reports to shallow or deep groundwater systems. Water is being retained physically or chemically within the dump and may, in the longer term, be released and require treatment.
Groundwater	• Flowpaths downstream of the dumps at Faro and Vangorda, in the Rose Creek tailings area are unknown.
Seepage	• Water balance and mass balance (in seepage) for Main Pit and Zone II pit to assess storage capacity and seepage potential. • Seepage from Grum pit.
Diversions	• Geotechnical stability and hydrologic capacities for existing and proposed Faro, Vangorda and Rose Creek Diversions.

Table 3.2 - Knowledge Gaps with Respect to Water Chemistry

Topic	Description of Knowledge Gap
Waste Dump Drainage	• Predictions were made in the 1996 ICAP of "worst case" drainage chemistry from waste dumps. However, the remaining questions are "how soon?" and "how much?". • What would be the load to a treatment facility for long-term collection and treatment of Grum waste rock dump drainage, should it occur?
Tailings	• Specific requirements for water management and water treatment if relocation of the tailings occurred.
Pit Water	• Length of time required to achieve acceptable discharge water quality in both the flooded tailings and in the open pits. • Available measures to achieve dischargeable water quality in

Topic	Description of Knowledge Gap
	the open pits or to allow some version of the flow through option at both Faro and Vangorda. • Water treatment options and requirements if waste rock and/or tailings were moved to the pits.

Table 3.3 - Knowledge Gaps with Respect to Engineering and Geotechnical Issues

Topic	Description of Knowledge Gap
Field Conditions	• Investigation of foundation conditions for treatment plant and contaminated water storage reservoir. • Location for a spillway in bedrock for the Intermediate Dam. • Field conditions for routing of Faro Creek diversion around west side of pit.
Stability	• Stability (under dynamic loading) of Intermediate Dam for all options, including the proposed toe buttress. • Stability of north pit wall as the pit floods, and requirements to route Faro Creek Diversion and/or inflow away from north wall failure zone.
Design and Materials	• Foundation conditions and construction material (and source) for the Plug Dam and spillway for Faro Main Pit. • Cover design and borrow sources.
Engineering	• Detailed engineering for construction of treatment facilities, re-routing of diversions, stabilization of the Intermediate Dam and construction of the Faro Plug Dam and spillway.
Tailings Relocation	• Methods of moving and treating the tailings.

These knowledge gaps will need to be addressed prior to the completion of a closure plan.

3.2. CLOSURE PLANNING MANAGEMENT

DIAND and the Yukon Government have agreed to take a co-operative approach to the environmental management of Type II mine sites listed in the Devolution Transfer Agreement (DTA), that are under government care. This includes activities undertaken for interim care and maintenance through to the closure and final reclamation of these sites. A joint Steering Committee has been established to provide senior level leadership and direction to a project management team with respect to the Type II sites.

3.2.1. ROLE OF GOVERNMENT

In January 2003 DIAND and the Government of Yukon acknowledged that the Anvil Range mine was not going to reopen and stated publicly that closure planning would be the responsibility of the two governments. The Type II Mines Project Office, established by DIAND and the Yukon Government, will be responsible for overseeing mine remediation planning at the Anvil Range site and ensuring intergovernmental coordination and involvement, including First Nations involvement. These responsibilities include:

- Reclamation planning including development of abandonment options;
- Development of the Faro Final Closure and Reclamation plan;
- Preparation of the environmental assessment report for review under YEAA or YESAA;
- Ensuring all regulatory authorizations are in place;
- Remediation of the site; and
- Follow-up monitoring.

An important component of these responsibilities will be communication and consultation throughout the process with affected communities, interested parties and groups. The Type II Mines Project Office[4] recognizes the need to maximize continuity, momentum and stability for closure planning at this property during a period of transition. The Project Office will utilize previous planning efforts to the extent possible in the development of the FCRP.

3.2.2. ROLE OF FIRST NATIONS

Four First Nations are specifically identified, under Chapter 6 of the DTA, as "Affected First Nations" with respect to final abandonment of the Anvil Range Mine Complex. First Nations' involvement will be integrated into the closure planning process, to ensure that the obligations set forth in Chapter 6 of the DTA are met. Invitations have been sent out to the four First Nations to meet to discuss key considerations regarding planning for closure and abandonment of this site and First Nation participation. The specifics of the involvement of First Nations will be determined through these discussions.

3.2.3. LINKAGE TO INTERIM RECEIVER

The Interim Receiver has overseen the management of the Anvil Range property under the terms of the existing water licences since its appointment in 1998. There are outstanding legal issues to be resolved with regards to the property and its administration, which the Interim Receiver must address. The Interim Receiver will continue to have the responsibility for environmental care and maintenance operations at the site, until these issues are addressed and the interim receivership is wound up. Additional activities planned by the Interim Receiver for the next licence period include the continued collection and provision of data regarding on-going site characterization work.

3.3 INITIAL CLOSURE PLANNING

The complex nature of the environmental issues at the site and the current wide range of closure costs, estimated at between $175 and $350 million, requires that a rational, step-by-step closure planning process be followed.

[4] The contacts for the Type II Mines Project office are listed in Appendix B.

3.3.1. STUDIES REQUIRED TO FILL KNOWLEDGE GAPS

In the May 2002 Project Description, the Interim Receiver outlined proposed studies designed to fill several knowledge gaps. These are described in Appendix A. The rationale and appropriateness for these studies will be reviewed by the Project Team, along with those gaps identified in Tables 3.1, 3.2 and 3.3. The 2002 studies completed by the Interim Receiver will also be reviewed. Based on overall closure objectives, studies will be integrated into a comprehensive program to carry out in the 2004 to 2008 water license period. No closure objectives have been pre-empted nor will the identified studies constrain future decisions.

3.3.2. FINAL CLOSURE AND RECLAMATION PLAN PREPARATION

The studies listed in Appendix A and/or others identified by the Project Team will be used in preparing a FCRP. The selection of closure alternatives will be conducted within the project management and consultation structure described in Section 3.2. The comprehensive closure plan will address all of the facilities at the site.

3.3.3. REGULATORY APPROVAL PROCESS

The submission of the FCRP document will trigger a YESAA assessment. An EAR, or its equivalent under YESAA, will be prepared, to evaluate the environmental impacts of the FCRP and it will be reviewed under YESAA.

A water licence application will be submitted and a water license obtained prior to implementation of closure measures.

3.3.4. PROJECT SCHEDULE

The Project Team is working towards the timelines recommended for inclusion within the Receiver's current water licence application. To provide for sufficient time for this task, studies and closure planning activities have been designed to take place as expediently as possible while providing sufficient information to assess a range of closure alternatives.

4. LINKAGE TO WATER LICENCE RENEWAL

Through the authority granted by its Interim Receivership Order, the Interim Receiver has, in May 2003, submitted an application to the Yukon Water Board for the renewal of the water licences. This describes and justifies proposed changes to the water licence relating to care and maintenance. A request has been made to group the closure clauses within the licence and hold them in abeyance until the submission of the FCRP.

Anvil Range (as represented by the Interim Receiver), will be legally bound by the terms of the new licence until its' affairs are wound up. The closure plan will be developed by the Type II Mines Project Office and submitted to the Yukon Water Board for review and approval. Canada and the Yukon Government have accepted the responsibility of ensuring that closure planning is done and closure of the site is completed.

5. CONCLUSION

The information provided in this document provides an outline of the process to be followed for integrated and updated closure planning at the Anvil Range property. It also describes the current management approach for closure planning during the next licence term and potential closure studies and timelines that the Project Team will address.

APPENDIX A: IDENTIFICATION OF KNOWLEDGE GAPS RELATED TO CLOSURE PLANNING – BY THE INTERIM RECEIVER

{tc \l1 "APPENDIX: IDENTIFICATION OF KNOWLEDGE GAPS RELATED TO CLOSURE PLANNING}The information provided in the Integrated Comprehensive Abandonment Plans (ICAP) as part of the previous water licence obligations by Curragh Resources and Anvil Range Mining identified a number of areas in which additional research and/or data collection was needed. Subsequent work by the Interim Receiver added knowledge of abandonment methods but pointed out further gaps in the knowledge required for acceptable final abandonment planning.

The currently identified knowledge gaps are:

1. Faro Mine Site

{tc \l1 "1. Faro Mine Site}

1.1 Rock Dump and Open Pit Geochemical Characterization

{tc \l2 "1.1 Rock Dump and Open Pit Geochemical Characterization}

- Waste Rock Dump Water Balance Studies:
  - Snow survey data to support improved estimates of the rate at which water infiltrates the dumps.
  - Drill hole programs to assess any effects of frozen zone conditions on rates of water seepage from the dumps.
  - Revision of 1996 ICAP water balance calculations based on results of snow surveys and drill hole programs.

- Predictions of seepage contaminant concentrations from Faro waste rock dumps and Faro open pit lake.

1.2 Closure Alternative Studies

- Conceptual design and cost estimates for Faro waste rock dump decommissioning:
  - Surface regrading
  - Cover types and performance
  - Relocation options

- Faro Creek Diversion Options:
  - Upgrades to the current system
  - Re-alignment to the N.E. of the current location
  - Allowing flow-through the existing open pit
  - Re-alignment through a back-filled pit
  - Flow through constructed channel or tunnel in the pit area.

- Faro Water Collection and Treatment System Options

- Pumping versus gravity feed to treatment plant(s)
- Treatment plant location
- Feed(s) to treatment plant
- Volumes requiring treatment

2. Rose Creek Valley

- Site Characterization
  - Hydrogeology of the tailings
  - Geochemistry of the tailings

- Decommissioning Options
  - Performance of wet covers
  - Performance of dry covers
  - Relocation to the Faro Open Pit
  - Characterization of the Rose Creek Valley aquifer
  - Risk-based engineering criteria
  - Long-term water treatment requirements

- Tailings Cover Test Cell Program

3. Vangorda Plateau Site

{tc \l1 "3. Vangorda Plateau Site}

- T{tc \l2 " * Temperature and gas exchange study if Vangorda and Grum waste dumps}emperature and gas exchange study of Vangorda and Grum waste dumps Revised water balance studies based on information obtained from snow survey program and acid rock drainage geotechnical testing

- Water infiltration rates in frozen zones to determine seepage rates from dumps

- Closure Alternatives
  - Regrading dump surfaces
  - Cover types and performance
  - Relocation options for Vangorda and Grum sulphide waste rock
  - Critical analysis of 1994 waste rock cover trials

- Vangorda Creek Diversion Options
  - Upgrades to current system.
  - Redirection of flow to Shrimp Creek
  - Routing water through the current open pit
  - Routing flow through a back-filled pit
  - Routing flow through a tunnel in pit area
  - Via aqueduct or flume over causeway in partially-filled pit

APPENDIX B: PROJECT MANAGEMENT

Joint Government Management Structure:

JOINT DIAND-GY STEERING COMMITTEE

DIAND	Government of Yukon
Assistant Deputy Minister Northern Affairs Program	Deputy Minister Energy, Mines and Resources

TYPE II MINES PROJECT OFFICE

DIAND	Government of Yukon
Team Leader, Type II Mines	Director, Assessment & Abandoned Mines
Mine Reclamation Engineer	Project Manager

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Map Search
EHS
1 ARMC Interim Receivership
2 Contact Information
3 EHS, TAC Reports and Data
4 Listing of Final Project & Study Reports
5 eRoom Reference Material
6 Collaboration Area
1. Open Discussion Forum Anvil Range
455-01 Fresh Water Supply Dam (FWSD)
455-02 Environmental Maintenance (ENVMNT)
455-03 Rose Creek Tailings (RCT)
455-04 Renewable Energy (RNNRG)
455-05 Risk Based Management (RBMGT)
455-06 Vangorda Acid Rock Drainage (VARD)
455-07 Vangorda Water Treatment (VWT)
455-09 Water Licence Renewal (H2OLR)
455-10 Faro Water Treatment (FWT)
455-11 Mass Loading Balance (MLB)
455-12 ESA Concentrate Load-out (ESACL)
455-13 Dam Safety Reviews 2002 (DSR'02)
455-14 Emergency Response Plan (ERP)
455-15 ARD study
455-16 - June 2003 Technical Workshop
7 D&T Workspace
1. D&T Team Calendar
AVR - EHS PRE 2002
AVR -EHS 2002
Court Reports
EHS Projects
455-01 Fresh Water

Liaison with Ottawa re. CEAA screening

a note created by Shannon Glenn on 1 Oct 02

A meeting was held with Ottawa on September 26. The agenda and supporting documents are attached.

Attendees included Sarah Kalff, Robert Lauer, Doug Sedgwick, Chris Cuddy, Joanna Ankersmit, Shannon Glenn, Valerie Chort and Wes Treleaven.

SG went through attached written notes (without distributing) regarding status of CEAA process. The current status was much discussed. The outcome was for D&T to send a Letter regarding CEAA status to Robert Lauer. The letter would include a coverning letter outlining our concerns, the exemption enquiry and response and a letter from our legal counsel regarding ways in which the CEAA screening could be considered exempt or be scoped narrowly.

Additional information regarding development of CEAA process can be found at EAR Guidelines and scope of screening.

Comments

Post TAC meeting discussion (Shannon Glenn, Deloitte & Touche, 29 Jan 03 2:13pm)
Following the Meetings in Whitehorse during January 2003 TAC and Discussions with the Water board, WT and SG had a conversation with Chris Cuddy and Robert Lauer on Tuesday January 28 2003.

It was communicated that the schedule was in all likelihood going to extend beyond December 31, 2003.

An update was provided regarding public statements made regarding path forward for water licence during the TAC meeting the previous week in Whitehorse, meetings with DIAND Environment Directorate and the discussions with the Board.

The flow sheet developed following the Discussions with the Water Board was discussed.

The outcome of the call was not conclusive. DIAND ottawa requested a summary document for discussions with YTG. SG followed up on January 30 2003 (see attached).

Dave Sherstone reaction to extension (Shannon Glenn, Deloitte & Touche, 27 Feb 03 4:34pm)
Dave Sherstone reacted negatively to extension question. He had heard about it through Bill Slater. SG had communicated this intent to Bill Slater per January 31 2003 call re. draft guidelines.

Dave's objection letter (attached) was sent to IR but he explained later that it was intended for Ottawa.

The IR learned from Robert Lauer on February 10 that Ottawa and the

- H20LR-t-010802-License Renewal Confirmation.doc
- H20LR-L-080202-letter from Chief Caesar to WAT.pdf
- H20LR-L-080602-letter to Chief Caesar re Oct 10 Public Meeting.doc
- H20LR-Letter to the Chief regarding change of date for Faro public meetings
- H20LR-t-Received comments re Project Description
- H20LR-m-010402-Review of rules of procedure and Yukon Waters Act.doc
- H20LR-m-021202- TOC for CEAA project description.doc
- H20LR-M-112101 Group meeting.doc
- H20LR-mm-011402-Schedule for Whitehorse visit on week of January 28.doc
- H20LR-mm-011602 - Schedule for meeting in Whitehorse.doc
- H20LR-t-010302 - Need for ecological risk assessment.doc
- H20LR-t-012102-Availability of DFO and EC for meeting in Whitehorse.doc
- H20LR-t-012302-Two year extension option.doc
- H20LR-t-020602 - Initial contact with either CEEA project

- The spirit of the current draft of the harmonization agreement is to be followed
- DIAND Ottawa needs to come up with a screening report and should be able to appoint someone within a week to fulfill the CEAA obligations.

A confirmation letter was sent to Sarah Kalff from Heenan Blaikie and was circulated to meeting participants and Robert Lauer.

Attachments

September 26 meeting with Ottawa.pdf

memo re current status of the WLR.msg

H20LR-t-020803-Dave Sherstone letter extension proposal.pdf

Draft Harmonization Agreement.PDF

update on Anvil Range EAR.msg

Letter to Sarah Kalff regarding CEAA/YEAA transition from Heenan Blaikie.PDF

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Deloitte & Touche

February 6, 2003

Robert Lauer
Department of Indian and Northern Affairs Canada
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10 Wellington St.
Ottawa, Ontario K1A 0H4

Dear Mr. Lauer:

Re: Anvil Range Mining Corporation ("Anvil Range")

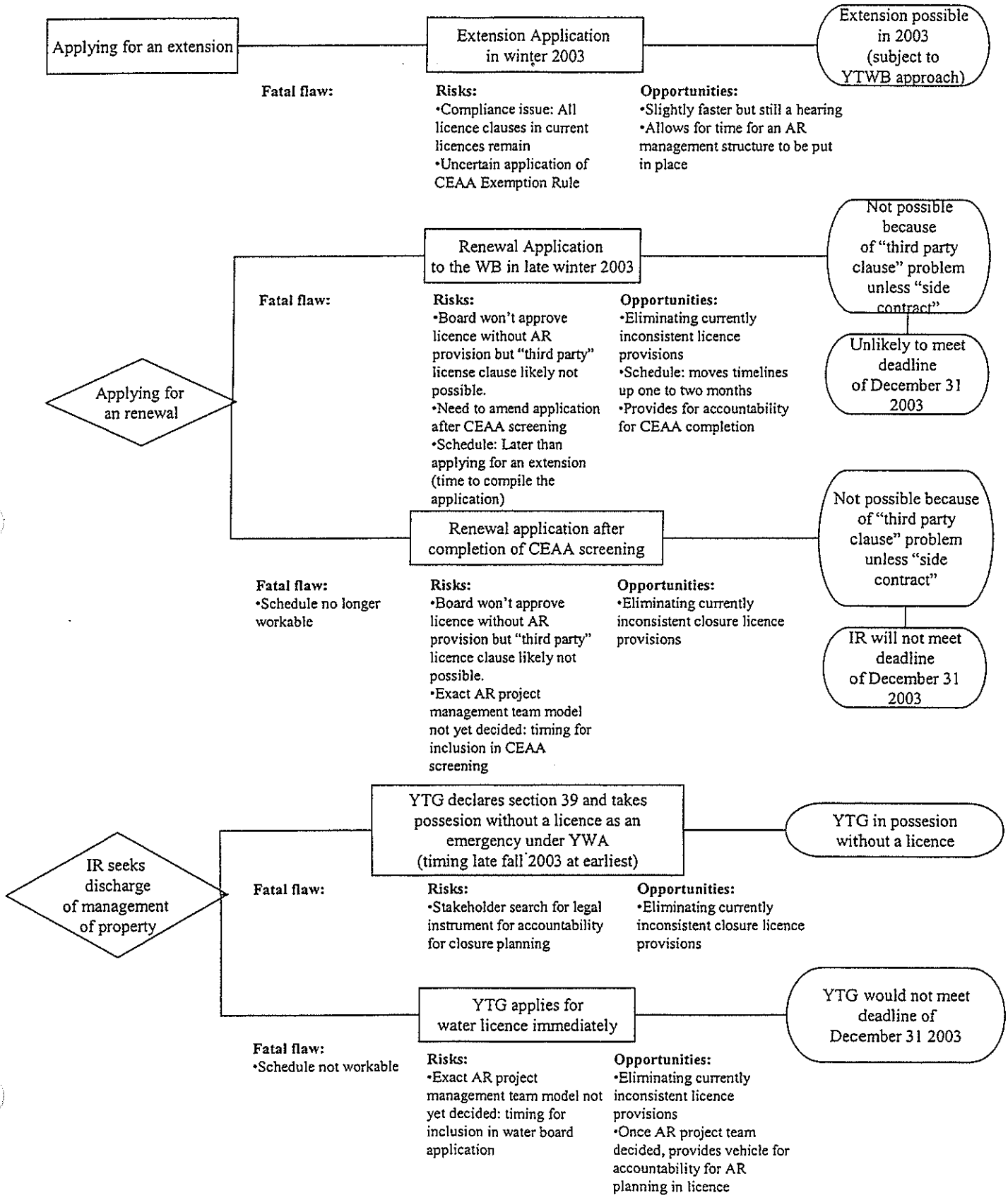
Further to your request, we have prepared an update regarding the status of the water licence renewal process for the Anvil Range property, with an emphasis on scheduling implications. Also, as we believe that the deadline of December 31 2003, is no longer achievable, we include a recommendation regarding a backup measure.

Two meetings were held in Whitehorse with DIAND Environment Directorate during the week of January 20, 2003 regarding next steps for the CEAA screening. As a result of these meetings it is the understanding of the Interim Receiver that draft guidelines are intended to be out by February 7th and in final form by March 7th. A schedule was developed at the meeting, targeting completion of the CEAA screening on June 30th, and an application to the Water Board on the same day, for completion of the re-licensing process on December 31, 2003.

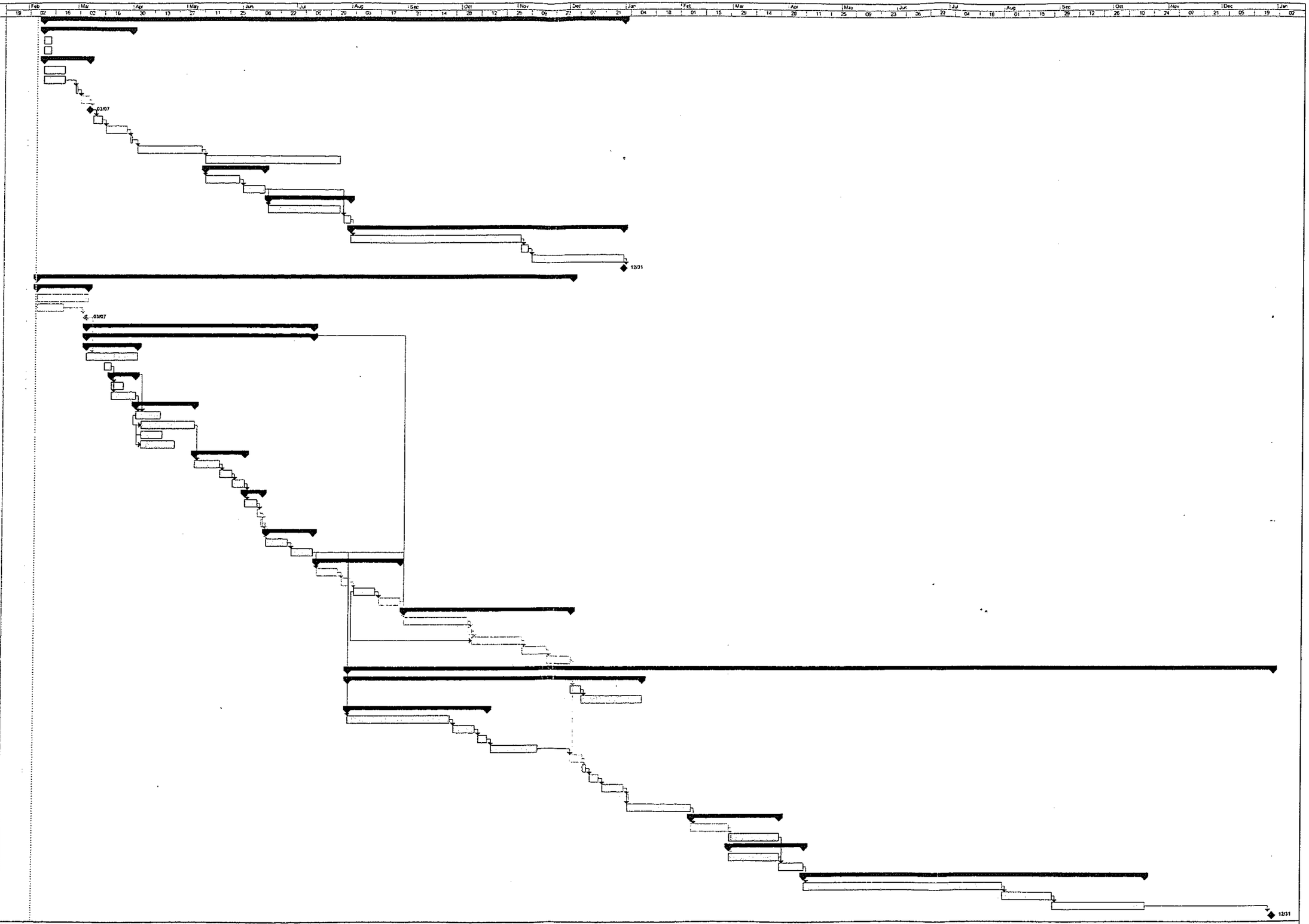
This schedule was reviewed later in the same week with the Secretariat of the Water Board, our legal counsel and our consultants. In light of these discussions, it was concluded that it is not workable to follow a sequential CEAA-Water Board process and obtain a licence by December 31, 2003.

We have reviewed strategic options as are outlined in the accompanying decision tree diagramme. These point to the feasibility of applying immediately for a one-year extension of the two licences with no modifications other than the expiry date. The letter to the Water Board which would accompany the application would describe a history of undertakings to-date, our intent to also continue with the licence renewal process currently underway, an outline of reasons why the Exemption Rule under CEAA would apply to a one-year extension and an explanation for our request for a one-year extension as a proposed solution to addressing scheduling challenges having arisen through the process followed to date. The idea would be that the "extension" licence would be become void as soon as the "renewal" licence" would come into effect. Preliminary discussions with Yukon DIAND Water Resources about this option has led us to understand that a precedent for this approach exists as it had been previously adopted by Sa Dena Hes.

ARMC Water licence strategic options as at January 30 2003



ID	Task Name
1	Extension Water Board Application
2	Submission of Application
3	Stakeholder Consultation
4	Regulatory Consultation
5	Application Development
	Legal Preperaion of supporing letter
	Technical support for application
8	Development of Application
9	DIAND Internal Review of Application
10	Submission
11	Assess for completeness
12	Internal board discussion
13	Alert DIAND
14	Gazetting
15	Local Board/Government Liaison
16	Interventions
17	Submission of interventions
18	Response to Interventions
19	Hearing (If required)
20	Water Board Hearing Strategy/Interventions
21	Water Board Hearing
22	Post hearing
23	Licence Decision
24	Follow Up from Water Board Hearing
25	Ministerial approval
26	Licence issued
27	CEAA
28	Guidelines
29	RERC Review of Draft Guidines
30	Review of EA Draft Guidelines
31	Issuing of Final Guidlines
32	EAR
33	Production of EAR document
	TOC
	Approval of Final TOC
	TOC Consultation
37	Project Description
38	Obtain Legal advice on landfill
39	Update Project Description
40	Revison/Update of Baseline Information
41	Integrate 2002 new data
42	Revisions of baseline document
43	Traditional knowledge gathering
44	Integration of 2002 site characterization
	Completion of Draft EAR
	Preparatory work for working meeting
	Internal Working meeting in Calgary
48	Production of Draft EAR
49	EAR results workshop
50	Preparation for EAR workshop
51	EAR workshop to review result of draft EAR
52	RRDC consultation
53	Completion of Final EAR
54	Updating EAR based on workshop
55	Production
56	Government review process
57	Conformity check
58	Deficiency requests
59	Response to Information Requests
	Completion of EAR review
	EAR Screening (based on discussions with Gomm)
	RERC/stakeholder review
63	RERC Workshop
64	Writing Draft screening
65	Stakeholder review of draft screening
66	Final screening
67	Renewal Water Board Application
68	Submission of Application
69	Stakeholder Consultation
70	Regulatory Consultation
71	Application Development
72	Technical supporting documentation
73	Application preparation
74	Legal Review of application
75	Review and approval of Application by appropriate mai
76	Consultation (RRDC)
77	Submission
78	Water board Assessment for completeness
79	Internal board discussion
80	Alert DIAND
81	Gazetting
82	Interventions
83	Submission of interventions
	Response to Interventions
	Hearing (If required)
	Water Board Hearing Strategy/Interventions
	Water Board Hearing
88	Post hearing
89	Licence Decision
90	Follow Up from Water Board Hearing
91	Ministerial approval
92	Licence issued



Project: Planning CEAA-WLR
Date: Thu 02/06/03

Task | Split | Progress | Milestone | Summary | Project Summary | External Tasks | External Milestone | Deadline

Map Search
EHS
1 ARMC Interim Receivership
2 Contact Information
3 EHS, TAC Reports and Data
4 Listing of Final Project & Study Reports
5 eRoom Reference Material
6 Collaboration Area
1. Open Discussion Forum Anvil Range
455-01 Fresh Water Supply Dam (FWSD)
455-02 Environmental Maintenance (ENVMNT)
455-03 Rose Creek Tailings (RCT)
455-04 Renewable Energy (RNNRG)
455-05 Risk Based Management (RBMGT)
455-06 Vangorda Acid Rock Drainage (VARD)
455-07 Vangorda Water Treatment (VWT)
455-09 Water Licence Renewal (H2OLR)
1. RFPs
2. Communications
Baseline Table of Contents
Clarification of baseline scope of work
Comments on EAR
Detailed vegetation sampling design and agency comments
Draft EAR
EAR Guidelines and scope of screening
EAR scoping and methodology
Fisheries feedback regarding study methodologies for EAR
GLL Communication

Linkage with Project Team

a note created by Shannon Glenn on 19 Feb 03

Conversation between Wes, Shannon and Dave Sherstone, in his capacity of Chair Team for Type II sites in Yukon.

1. Closure requirements: leaning towards option #2 outlined in Dave's letter datec 2003. Partial removal based on Eric's analysis of closure clauses in the licence. T included in EAR then in the Application to the Water Board.
2. Schedule: EAR by end of March, discussion with Project Team, which will be fo March, with a working session to iron out terms of the licence. Application to be thereafter, before screening report, in early April. Changes to application result screening to be handled through submission of additional schedules as an exhibit, hearing. Level of design detail in application will be comparable to what is in the EAR. DS referenced (and faxed) water licence regulations, section 6(1) (Applicati which supports the position that detailed design is not required.
3. Contingency planning: referenced 1) extensions given in past, 2) Dawson examp with due diligence case. Further need to discuss!
3. AR planning team reflection in licence: not discussed much but recognised nee soon.
4. Ross River: SG described intent to collect TK in March and the fact that they wi reviewing guidelines now. DS intends to discuss closure planning process in April/ will let them know that this conversation is coming. Hence, not necessarily a sch with them for March.

Action item: sent agenda to Wes, copied Dave for meeting tomorrow at Heenan Bl Murray, GLL, YTG and Ottawa. Received fax from Dave.

Comments

February 20 meeting (Shannon Glenn, Deloitte & Touche, 27 Feb 03 3:50pm)
At Heenan Blaikie.
Pre-meeting with: Marg Crombie, Tom Potter, Robert Lauer, Joanna Ankersmit, K Charnetski.

Discussed attached agenda.

Added Dave Sherstone and Chris Cuddy and GLL on the phone.
Conclusions:

- classify licence closure clauses into remove and set-aside. To be discusse and the application. Need to be specific rather than general because that expectation of the level of detail for the application. We need to avoid a we surprise stakeholders at the end.
- schedule/contingencies: Dave Sherstone to get back to us with respect to
- contact with the Water Board: Murray Leitch to write a letter introducing council and describing intended timing of application. Letter to be cc'd to
- application to be done in mid-May. Discussion weighed pro of applying ea really start the clock?) vs. applying later where modifications to applicatic substantial. Applying early (early April, without supporting technical docu before the completion of the draft screening) would require modifications at a later date to address these deficiencies. Risk of antagonizing Board a

Records
H20LR-m-030802-Anvil Range_Agenda_April 14 17.doc
H20LR-m-030802-Anvil Range_Workshop Agenda_FEB 20.doc
H20LR-013003-m-Licensing strategies going forward.doc
Linkage with Project Team
Planning of Open Houses
Project Description Inputs
RERC meetings
Water Board
Weekly Tuesday conference calls, starting July 30
3. Working Papers
4. Interim Reports
5. Discussion Forum
455-10 Faro Water Treatment (FWT)
455-11 Mass Loading Balance (MLB)
455-12 ESA Concentrate Load-out (ESACL)
455-13 Dam Safety Reviews 2002 (DSR'02)
455-14 Emergency Response Plan (ERP)
455-15 ARD study
455-16 - June 2003 Technical Workshop
7 D&T Workspace
8 Extranet Manager's Admin
Recycle Bin

March 10 meeting (Shannon Glenn, Deloitte & Touche, 11 Jun 03 1:57pm)
A meeting was held with SG and Marg Crombie, Dave Sherstone, Leslie Gomm.

Agenda included:
1. Update on supreme court decision (not to hear the appeal)
2. Review of D&T's response to the Guidelines
3. Review of the TOC of the EAR
4. Discussion of the FWSD
5. Update on DS's meetings with DFO/EC

It was agreed that, in addition to the EAR, a companion document would be subm EAR process by the Type Mines Office.

Meeting April 3 and 4th to review draft EAR and draft water licence applicatio Glenn, Deloitte & Touche, 11 Jun 03 2:08pm)
Details of a meeting are available regarding a meeting with the Project Team to r Draft EAR and the water licence application.

A follow-up letter sent subsequently to that meeting regarding the companion do EAR was sent to Dave Sherstone and Marg Crombie.

Some emails are attached regarding subsequent correspondance relating to the d the companion document.

A meeting was held on May 9th with Dave Sherstone, Marg Crombie and Hugh Cop further edits. The document was left with the Type II Team to complete.

May 8 meeting re water licence application (Shannon Glenn, Deloitte & Touc 12 Jun 03 10:15am)
A meeting was held May 8 2003 with the Project Team to discuss further details o licence application.

Attachments

Anvil licence closure terms v.3.xls
H20LR-m-022003-Agenda re contingency and strategy meeting.doc
H20LR-l-021703-Dave Sherestone letter closure requirements.pdf
SUPPLEMENTAL MANAGEMENT DOCUMENT TO FARO LICENCE E A R .msg
VOICE MAIL SHANNOI GLENN O SUPPLEMENT REPORT.m
RE MEETINGS ON FARO RELICENCING.msg
master version of the document.msg
exact title request (urgent).msg
Re exact title request (urgent).msg
Completior the compar document tc EAR.doc

Indian and Northern Affairs Canada
Affaires indiennes et du Nord Canada

Shannon Glenn.

345 - 300 Main Street
Whitehorse, Yukon, Y1A 2B5

Your file Votre référence

Our file Notre référence

January 20, 2003

Distribution List
(see attached)

Update Anvil Range Mining Properties (Faro Mine)

We are writing to update you on our plans over the next several years for managing both the environmental care & maintenance and regulatory obligations at the Anvil Range mining properties. DIAND's goals are to advance the formal receivership of the Faro mine as rapidly as practicable, to renew the Faro and Vangorda water licences to 2008 and to prepare a Faro Mine Remediation Plan which will guide the ultimate clean-up. Because this activity will occur after the devolution of DIAND's Yukon resource management programs to the Government of Yukon, we expect these initiatives to involve all three levels of government and a number of other stakeholders, as well as incorporating public input.

Currently, the Anvil Range mines and assets are under the control of a court-appointed Receiver, Deloitte & Touche Inc. That company is undertaking the steps necessary under the *Companies Creditors' Arrangement Act* (CCAA) to wind up the corporate affairs of Anvil Range. At the same time, the Receiver has been responsible for on-site care & maintenance, including operating water treatment systems at both Faro and the Vangorda Plateau. This is being done to prevent environmental harm and protect public health and safety.

Additionally, the Receiver, funded by DIAND, is preparing material for an environmental screening under the *Canadian Environmental Assessment Act* (CEAA) and submission of an application for a water licence renewal. This would result in a new "care & maintenance licence covering the period from December 31, 2003 to December 31, 2008.

In conjunction with the Government of Yukon we are now planning the steps for establishing a Faro project team. This will result in the separation of the Receiver's role in Anvil Range's corporate affairs and site care & maintenance from that of completing the Faro Mine Remediation Plan.

Until the receivership of Anvil Range and its creditors are resolved through the courts, Deloitte & Touche will remain as Receiver. Included in its responsibilities will be the day-to-day water treatment and environmental care operations at the minesites. As the on-site agent Deloitte & Touche may also be asked to undertake urgent projects to reduce unacceptable risks to public health or prevent major failures of the mine's infrastructure.

The Faro project team will assume responsibility for the Faro Mine Remediation Plan with the goal of having it completed and approved prior to the expiry of the 2008 licence. This reflects the realization that the Faro and Vangorda-Grum mines will not return to production and thus government will be ultimately responsible for the reclamation of these sites.

Presently, DIAND and GY are in initial discussions over the make-up and operation of the Faro project team. We intend to involve First Nations at an early date, respecting and recognizing that the affected First Nations will have a special role in whatever process is developed.

Once the project team is announced you will be contacted and asked to participate in the planning process. In the interim, if you have any questions please contact one or both of us at your convenience.

Yours sincerely,

John Brown
Regional Director General
Yukon Region

Ian McGregor
Director General
Environment and Renewable Resources Directorate
Northern Affairs Program, DIAND
Ottawa

Distribution List:

Chief Jack Caesar, Ross River Dena Council
Chief Lucy McGinty, Selkirk First Nation
Tribal Chief Hammond Dick, Kaska Tribal Council
Grand Chief Ed Schultz, Council for Yukon First Nations
George McKenzie-Grieve, Manager Environment Protection Service, DOE, Whitehorse
Don Fast, Director-General, Pacific & Yukon Region, DOE, Vancouver
Gord Zealand, Chief, Northwest B.C. and Yukon Area, DFO, Whitehorse
Angus Robertson, Deputy Minister, Energy, Mines & Resources, Government of Yukon
Marg Crombie, Energy, Mines & Resources, Government of Yukon
Yukon Salmon Committee
Yukon Conservation Society
Wes Treleaven, Vice-President, Deloitte & Touche, Toronto
John Porter, Counsel, Ogilvy Renault, Toronto

17 K

Indian and Northern Affairs Canada
Affaires indiennes et du Nord Canada

Water Resources Division
#310 - 300 Main Street
Whitehorse, Yukon, Y1A 2B5

Your file Votre référence:

Our file Notre référence
Faro Mines -
Anvil Range

February 17, 2003

Ms. Shannon Glenn
Deloitte & Touche LLP
Suite 1900 - 79 Wellington Street
P.O. Box 29 TD Centre
Toronto, Ontario, M5K 1B9

Fax # (416) 601-6390

Dear Ms. Glenn:

RE: RENEWAL OF ANVIL RANGE WATER LICENCES

On February 08th I sent a letter to Mr. Wes Treleaven of your firm setting out Water Resources concerns with an application for a one-year extension of the two existing Anvil Range water licences. In that correspondence I identified a number of clauses in water licences QZ95-003 and IN89-002 that would require addressing. I understand from Leslie Gomm of our Environment Directorate that this has created uncertainty within Deloitte & Touche on the scope and approach to the water licence application. This letter is intended to address that matter.

Now that the decision has been made to proceed with all possible speed to obtain a single, five-year water licence to replace both existing licences the question remains; how does Deloitte & Touche address the 13 clauses I identified? Regardless of the approach chosen I believe these clauses will form the basis of any challenge to Deloitte & Touche's application and your firm must be prepared to justify their deletion.

The main body of the application should set out those activities and works Deloitte & Touche does intend to carry out and describe the need for the preparation of a new and effective comprehensive abandonment plan.

You should then consider identifying all those clauses which should be deleted and provide a specific, brief justification for their removal or set aside. (An obvious justification for several of the current requirements is that it is no longer physically possible to undertake such measures.)

At the public hearing Deloitte & Touche will be challenged on their removal. However, the Yukon Territory Water Board will deliberate on all the material presented and issue a licence

containing those terms and conditions it sees fit. There are then three principal outcomes:

The first is that the Board accepts the CEAA mitigation measures and the position argued by the proponent and issues a licence obligating care & maintenance and the submission of a comprehensive abandonment plan by the requested date. Current closure obligations are deleted from the new licence.

The second result is the Board issues a licence which focuses on care & maintenance tasks and sets aside the current closure obligations for a fixed period while also requiring the submission of a comprehensive abandonment plan by the requested date.

The third broad option is that the Board rejects the applicant's arguments and requires immediate or near-term implementation of some or all of the current abandonment measures.

There are, of course, numerous variations of the above scenarios

In my view either of the first two outcomes is acceptable in the short-term. The first approach is the most beneficial to all parties financially involved with the Anvil Range receivership. The second would likely require an amendment at some time during its life as it became irrefutable that certain requirements were impossible.

The third option is clearly unacceptable to all involved with the receivership, the care & maintenance of the properties and the responsibility for the preparation of the final remediation plan. Over the next several weeks a contingency plan should be developed to ensure that the appropriate action plan is in place for this eventuality.

I understand that Robert Lauer and you are setting up a conference call on February 20th and there may be some value in discussing this matter further during that call. Alternatively you can call me directly at your convenience and we can discuss in greater detail.

Yours sincerely,

David A. Sherstone

David A. Sherstone
Regional Manager, Water Resources Division

cc: Robert Lauer, Senior Financial Officer, Mineral Resources, DIAND HQ
Fax #(819) 953-9066

Indian and Northern Affairs Canada
Affaires indiennes et du Nord Canada

Water Resources Division
#310 - 300 Main Street
Whitehorse, Yukon, Y1A 2B5

Your file Votre référence

Our file Notre référence
Faro Mines -
Anvil Range

February 08, 2003

Mr. Wes Treleaven, Senior Vice-President
Deloitte & Touche Inc.
BCE Place
181 Bay Street, Suite 1400
Toronto, Ontario, M5J 2V1

Fax # (416) 601-6390

Dear Mr, Treleaven:

RE: PROPOSAL TO SEEK ONE-YEAR EXTENSION OF ANVIL RANGE WATER LICENCES FOR FARO AND VANGORDA

I understand from discussion with Yukon Region DIAND staff that the Receiver is considering an application to the Yukon Territory Water Board for a one-year "extension" to both Yukon Water Use Licences QZ95-003 and IN89-002. The intention would be to provide an additional year "breathing space" while the application for a 5-year licence renewal, combining both licences, proceeds.

Through this letter Water Resources wishes to express its' concerns. We believe that such an approach will: a) likely fail to meet the requirements of CEAA, b) will essentially double the cost to government for environmental screenings and regulatory processes, c) is certain to be opposed by other federal government departments (OGD's), and, d) will be rejected by the Yukon Territory Water Board as an "inadequate" application at the time of its submission.

A further concern is that an extension of the existing licences will automatically trigger a series of abandonment measures which, to date, all involved parties have agreed should not be completed.

Below I outline the concerns with the terms of the existing licences and would welcome Deloitte & Touche's comments on how these might be addressed in an extension application. In asking the questions for each licence clause I am seeking to anticipate the challenges that will be put to Deloitte & Touche by environmental screeners, OGDs, other stakeholders and the Yukon Territory Water Board at the mandatory public hearing. Again, I would welcome your firm's

response on how these might be avoided in a manner which meets the requirements of CEAA and water licencing within a reasonable time frame and at reasonable cost.

Requirements of Existing Licence QZ95-003

Clause 35:

> *"The licensee shall, within five years of continuous cessation of operations implement an approved tailings pond permanent abandonment plan."*

If we take February, 1998 as the date at which Anvil Range ceased operations it can be argued that permanent abandonment of the tailings facility should commence no later than the end of February, 2003. Technically, Anvil Range will be in violation of this term in 20 days from the date of this correspondence.

What argument will Deloitte & Touche make to the Board that this condition should be set aside for an additional year?

Clauses 46 and 47:

> *"A t least ninety (90) days prior to the construction, the Licensee shall submit to the board* [sic.] *detailed designs and site investigations for the Faro Pit Dam and associated water conveyance structures."*

> *"The Licensee shall construct the Faro Pit Dam and associated conveyance structures in accordance with the design that is submitted, except that, should the Board notify the Licensee that a public hearing will be held to discuss the designs, and should the notice include a direction not to release any effluent until such time as a public hearing has been convened and the Board has concluded it's* [sic.] *deliberations, then the licensee shall not release any effluent."*

These clauses contemplate the construction of the Faro Pit Dam as part of the abandonment measures required by this licence. It can, and likely will, be argued by OGD's and other stakeholders that setting aside this requirement represents an alteration of the flow, or quality of water and thus a public hearing is required under Section 21(2)(b) of the *Yukon Waters Act*.

How will Deloitte & Touche address the requirements of these clauses?

Clauses 63 and 64:

> *"Decommissioning of the Down Valley Tailings Facility Shall comply with Option 5 of the Down Valley Tailings Impoundment Decommissioning Plan (otherwise known as SRK*

Report 60635), providing that the following requirements have first been met:

a) The Licensee shall, by December 31, 2001, complete a Tailings Reprocessing Feasibility Study. This study shall include a financial feasibility component.

b) The Licensee shall submit to the Board a financing plan pertaining to Option 5.

c) The feasibility study and financing plan referred to in this part shall be subjected to public review.

"In the event that permanent abandonment occurs, or may reasonably be expected to occur, prior to the requirements of Section 63 having been completed, the Licensee shall ensure that abandonment of the tailings facilities takes place in accordance with Option 4 of the Down Valley Tailings Impoundment Decommissioning Plan (also known as SRK Report 60635).

As noted in the discussion of Clause 35, Water Resources interpretation of licence QZ95-003 is that this work is now required by Anvil Range.

How will Deloitte & Touche justify not undertaking the required abandonment measures for a further year?

Clause 66:

"Upon permanent cessation of mining and milling operations the Licensee shall:

(a) abandon the property in such a way as to ensure the long term physical stability of all water courses and tailings deposits with minimal post operational maintenance; and

(b) abandon the operation in such a manner that the long term water quality of Rose Creek downstream of the tailings facility shall comply with the Canadian Water Quality Guidelines of the Canadian Council of Resource and Environment Ministers, March 1987 (table 3.1, Guidelines for Freshwater Aquatic Life).

How does Deloitte & Touche propose to complete this work during the one year extension? If the work had been completed what evidence will be provided to environmental screeners and to the Water Board? If this work is not to be done, what is the justification for delay or not doing the required work?

Clause 67:

"In addition to any other requirements of this licence, the Licensee shall upon permanent

cessation of mining and milling operations fulfill all of the following obligations:

(a) remove the pumphouse and cover its foundation;
(b) remove the pumphouse dam;
(c) leave the North Fork of Rose Creek in a stable condition;
(d) remove the Faro Creek diversion structure and route Faro Creek into open pit No. 1;
(e) ensure that the waste rock dumps constructed of durable rock have slope crests with a set back distance equivalent to two horizontal to one vertical;
(f) ensure that waste rock dumps constructed of weak or friable rock and overburden have slope crests with a set back distance equivalent to three horizontal to one vertical;
(g) abandon sulphide-rich waste rock in a manner such that oxidation and leaching are unlikely to occur;
(h) establish the out flow from open pit No. 1 such that exposure of mineralized rock in the pit is minimized;
(i) implement the "Curragh Resources Inc. other Facilities Abandonment Plan, June 1989";
(j) breach the North Fork Haul Road rock drain;"

How does Deloitte & Touche intend to complete this work during the one year extension? If this work is to be delayed or not completed what is the justification?

Clause 68:

" In addition to the measures required by this licence, the Licensee shall, upon permanent cessation of operations at the Faro mine site, implement the measures described in the "Faro Mine Abandonment Plan (Curragh Resources Inc., 1998)" according to the schedule contained therein, to the extent that this plan does not conflict with the tailings deposition plan contained in Kilborn Report 350928, or the abandonment strategy for the North Fork Causeway proposed in Curragh report WH9108, or to the extent that said plan is not superceded by subsequently filed plans which are appended to this licence."

How does Deloitte & Touche intend to complete this work during the one year extension? If this work is to be delayed or not completed what is the justification?

Clause 71:

"The Licensee shall carry out the program of abandonment related studies and investigations appended as Schedule D to this licence."

If these are not yet complete will Deloitte & Touche complete these during the one year extension? If not, why not?

Clause 78:

> *"On or before the effective date of this licence, the Licensee shall submit to the Board an updated plan for the temporary abandonment of the Main Pit and the Faro Creek Diversion and related works and shall implement that plan during any subsequent closure."*

Is Deloitte & Touche prepared to accept and act upon this licence terms during the one year extension? If not, why not?

Requirements of Existing Licence IN89-002

Clause 9:

> *"Upon abandonment the Licensee shall construct the Vangorda pit wall covers as outlined in SRK report 60609, February 1990 (section 5, alternative 3.2)*

Does Deloitte & Touche intend to commence this work during the one year licence extension? If not, why not?

Clause 11:

> *"All seepage water from the Vangorda and Grum pits and dumps shall be collected and treated in the water treatment plant."*

Will Deloitte & Touche be doing this work, including redirecting any seepage from the Grum Waste Rock Dump to the Vangorda water treatment plant during the one year extension? If not, why not?

Part G - Clause 5:

> *"The Licensee shall, by June 15, 1998 and every fourth anniversary thereafter, submit to the Board a comprehensive analysis of the effectiveness of the mitigative measures of the abandonment plan, particularly as they pertain to acid mine drainage."*

Was this done on or before June 15, 2002? If not, is Deloitte & Touche prepared to carry it out during the one-year extension of the licence? If not, why not.

Interpretation of the Questions Raised by the Above Clauses

A review of the questions which arise from each of the clauses noted above reveals that these are

the same as those discussed in detail with Deloitte & Touche at the time the decision was made to apply for a five year licence renewal. At that time it was recognized that the work required to answer many of these questions could not be provided in the short term and thus a longer licence period was desirable.

At the same time our discussions led to the conclusion that those activities noted above were ones which neither party saw as either possible or beneficial given the current environmental status of the property. In planning the "way forward" with your staff Water Resources urged Deloitte & Touche to identify these items in the five year licence renewal application and demonstrate that the most appropriate approach was to have them removed from the renewed licence. This would involve the understanding that a replacement final abandonment and remediation plan would be submitted to the Water Board in 2006 and would then adequately address these matters. At the same time this discussion would provide sufficient justification for the completion of the CEAA screening.

Potential Objections to a One-Year Extension

In Water Resources view, an attempt to extend (renew) the existing licences without addressing the Clauses above is unlikely to succeed.

Most, if not all, of the non-government organizations (NGOs), such as the Yukon Salmon Committee and Yukon Conservation Society, and the affected First Nations can be expected to raise the strong objection that allowing a one-year extension without requiring the abandonment measures in the present licences is simply the Receiver and DIAND shirking their responsibilities. The question will be asked; "What's to stop the Receiver/DIAND from coming back in a year and asking for another extension - and then another one after that?" Most likely their position at a public hearing (and in the media) will be to demand the Board require commencement of the abandonment measures already incorporated in the present licences. Given DIAND's insistence on such work in its appearances before the Board on a number of other major mining licences it would be extremely difficult for Water Resources to argue publically for a 180° opposite approach in this case.

As you also heard from the DOE representative at the January T.A.C. Meeting in Whitehorse, DOE is vociferously opposed to any licence renewal which does not address abandonment. I would therefore expect DOE and possibly DFO, using the current licence and their recent application to the Board to have all the tailings moved to the Faro Pit, to present an intervention to the Board requesting either enforcement of existing licence requirements or substitution of their earlier application.

While an inter-departmental resolution at the senior federal level is possible, I would suggest that it would take several months. This would further ensure that no licence is in place before the December 31, 2003 expiry date.

I also understand from my January conversations with you that The Water Board will not accept any application which does not deal with abandonment. This means that an application without the measures noted above will be judged inadequate and not dealt with by the Board, or that Deloitte & Touche will have to keep the existing requirements in the licence. As all parties have agreed to date, neither of these outcomes is desirable or reasonable.

"Extension" (Renewal) Application must be CEAA Screened and a Water Board Public Hearing Held

Section 21(2)(a) of the *Yukon Waters Act* requires that a public hearing be held for the issuance or renewal of a Type 'A' water licence. Since the Faro and Vangorda licences expire in December of this year any application will be for a renewal as defined under the act. Earlier in this letter I noted that Water Resources believes that Section 21(2)(b) would also be triggered by an "extension" application.

Water Resources defers to DIAND's Environment Directorate on the triggers and scope of environmental screenings. However, in our experience with the application of the *Canadian Environmental Assessment Act*, no project with a licence "trigger" and of the scope of an extension can avoid a full and thorough review.

Doubling of Cost, Time and Staff Resources

With the concerns raised above Water Resources believes that a one year licence extension would be as, if not more, problematical that the previously agreed upon five-year application. Given the timelines which Water Resources has put forward in the last several years it would be necessary to carry forward, in parallel, both the one-year and five-year environmental assessments and applications.

At the present time Yukon Water Resources is stretched to its' limit dealing with environmental reviews and licence interventions. With Devolution to YTG occurring in a few weeks a significant disruption in short-term productivity is likely. Aside from Water Resources altering administrative procedures and policy there will be the requirement to coordinate both CEAA/YEAA screenings across a minimum of three Yukon Territorial Government (YTG) Departments and developing agreements on the presentation of a unified YTG intervention to the Water Board.

In my view there is no reasonable possibility at the present time of obtaining the necessary resources within either government to deal with the double workload created by both one-year and five-year licence applications.

Summary and Conclusion

Water Resources is concerned that a renewed discussion of a one-year water licence "extension" at this late date will result in additional time and effort on an approach which has no reasonable chance of success. Further delay will certainly result in the present licences expiring before any renewal can come into effect.

Another long series of DIAND internal discussions and federal interdepartmental dialogues may result in public challenges to DIAND's seriousness in adhering to the obligations set out in both the *Yukon Waters Act* and the *Canadian Environmental Assessment Act*.

I would therefore urge Deloitte & Touche to firmly choose and adhere to a clear and practical approach to water licence renewal in the immediate future and proceed through the environmental and regulatory processes with all due haste.

Yours sincerely,

David A. Sherstone

David A. Sherstone
Regional Manager, Water Resources Division

cc: Ian Church, Director, Environment Directorate
Mark Znum, Director, Renewable Resources
Robert Lauer, Senior Financial Officer, Mineral Resources Directorate, DIAND HQ
Chris Cuddy, Chief, Lands & Water Divisions, DIAND HQ
Joanna Ankersmit, Waste & Contaminants Programs, DIAND HQ
Leslie Gomm, Manager, Project Assessment, Environment Directorate
Sarah Kalf, Environmental Assessment Section, DIAND HQ

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Deloitte & Touche

March 3, 2003

Mr. Dave Sherstone
DIAND-YTG Joint Project Team
345-300 Main Street
Whitehorse YT Y1A 2B5

Dear Dave:

We are writing to confirm our understanding of conversations held with you on February 19 and 20 2003 arising from your letters to us dated February 8 and 17 2003 regarding the approach to the water licence renewal for the Anvil Range properties. Specifically, we address scheduling considerations and the approach regarding the closure clauses in the existing licences.

In a letter to Mr. Robert Lauer, dated February 6 2003, we had described our concern about the feasibility of meeting the December 31 2003 deadlines for renewing the water licences. We also outlined a proposed option to solve this scheduling challenge. The option suggested involved applying for a one-year 'extension' while continuing to proceed with the water licence renewal process already underway. The idea had been that the 'extension' licence would become void as soon as the 'renewal' licence came into effect. We also discussed this idea with Mr. Bill Slater during a call on January 31 2003. We understand that this proposal was discussed between DIAND region, DIAND Ottawa and YTG and that we have been advised not to pursue this option. As the scheduling challenge is still of concern to the Interim Receiver, we would like to take you up on your offer to outline for us possible alternatives/contingency plans, some of which you outlined during our discussion on February 20th.

For your reference, we have, since receiving the draft Guidelines on February 13 2003, outlined for ourselves a work plan for the completion of the Environmental Assessment Report. If the final Guidelines are not substantially modified following the RERC review and are made available in early March, we believe that we will be in a position to submit the EAR by the middle of April 2003. To that end, we look forward to meeting with you on April 3rd 2003 to review a draft of this document.

As regards the timing of the application to the Water Board, we understand from the conversation on February 20th that the Interim Receiver should apply to the Water Board in the middle of May 2003. This timing allows for a meeting with you in early April to discuss the format of the licence application, and for the development - to the extent that time permits - of technical supporting documentation based on the documentation submitted earlier in the EAR. In order to assist the Water Board from a timing perspective, we intend to prepare an update letter for them in early March which will describe the timing and intent of the applications that the Interim Receiver will be making regarding the water licence renewal and regarding the removal of the Fresh Water Supply Dam. This letter will also be copied to the RERC and to the TAC and would be written by Mr. Murray Leitch, whom we have retained as counsel to the Interim Receiver on matters related to the Water Board.

Regarding the approach to the closure requirements in the licence, we understand that the proposed approach is to divide the existing closure clauses into those that need to be removed from the licence and those that could be 'set aside' in the licence until the submission of a new abandonment and reclamation plan. Our intent regarding these licence clauses should be discussed in both the EAR and the water licence application.

We hope we have adequately summarized the February 19 and 20 2003 discussions and we would like to thank you for your time in helping us clarify some of these strategies. We remain committed to meeting this licensing deadline.

Yours very truly,
DELOITTE & TOUCHE INC.
in its capacity as Interim Receiver of
ANVIL RANGE MINING CORP.

Shannon Glenn
Manager
Enterprise Risk Services

c: Robert Lauer, DIAND
Chris Cuddy, DIAND
Joanna Ankersmit, DIAND
Leslie Gomm, DIAND
Marg Crombie, YTG
Murray Leitch, Miller Thomson LLP
Stephen Morison, GLL
Wes Treleaven, Deloitte & Touche Inc.

Glenn, Shannon (CA - Toronto)

From: Treleaven, Wesley (CA - Toronto)
Sent: April 23, 2003 9:59 AM
To: Chort, Valerie Jeanne (CA - Toronto); Sedgwick, Doug (CA - Toronto); Glenn, Shannon (CA - Toronto); Pearl, Ken (CA - Toronto)
Subject: FW: VISITS TO FARO - OTHER MEETINGS - TECHNICAL WORKSHOP

I want everyone to read this email from Dave Sherstone. About a week ago during a call Dave mentioned that senior representatives from YTG want a tour of the mine site. Dave felt this was important so that they get an appreciation for the size of the property. After Dana told me of his new for May 21st I called Dave and left a message suggesting that any tour should be arranged before the 21st. Here is his response. More importantly there are two other points. First he wants to talk about a technical workshop on my visit at the end of May and therefore if it is put over till then I believe it would be difficult to schedule such a session before the fall and therefore this season will have come and gone with no advancement in site work. Also Shannon take note that DOE believes that there is sufficient evidence to start to move the tailings and if they bring this before the Water Board we will get tied up forever. Valerie -- I have left a message for Joanna on this point as I believe the Steering Committee must take control to ensure the process does not get derailed and hopefully everyone will wait to 2006. Let discuss this
WES

-----Original Message-----
From: Dave Sherstone [mailto:sherstoned@inac-ainc.gc.ca]
Sent: Tuesday, April 22, 2003 2:57 PM
To: Treleaven, Wesley (CA - Toronto)
Cc: hugh.copland@gov.yk.ca; Marg.Crombie@gov.yk.ca; Bud McAlpine
Subject: VISITS TO FARO - OTHER MEETINGS - TECHNICAL WORKSHOP

This is in response to your recent voice mails.

Senior Management Visit to Faro Mine Sites
I'm sorry if there is some confusion over the persons wishing to visit the mines. They are the DIAND Deputy Minister and Assistant Deputy Minister, with possibly one or two of their HQ Executive Assistants.

The trip is not certain yet. Both these gentlemen are accompanying the DIAND Minister to the Mines Ministers Conference in Dawson in the week prior to the May long weekend. If the trip to Faro goes ahead the only time available for them will be the May long weekend.

It's not critical that Dana or other staff from the Receiver be available for the tour.

Most likely the Deputies will fly from Dawson to Faro and DIAND/YTG Type II Project Office staff will meet them with government trucks at the airport. Both Bud McAlpine and I have been alerted to the need to support their tour and I expect discussions will function on the management and funding of DIAND's obligations under the Devolution Transfer Agreement as well as the on-site issues and the relicencing initiatives. As long as we have access to the site I expect that there will be no need to involve your on-site personnel to a significant degree.

Possible May 26th Meeting in Whitehorse
It would be beneficial if you could set aside an hour on the P.M. of the 26th to meet with the staff of the Type II Project Office. Everyone

should be in place by then and it would give us an opportunity to discuss a possible Technical Workshop in more detail.

Technical Workshop
This remains a good idea.

I met last week with Vic Enns of DOE and he remains convincer that there now exists sufficient technical information and justification to warrant starting to move the Down Valley Tailings to the Faro Open Pit.

- A technical workshop, involving the YTG, DOE, DFO and First Nation participation may be the best means of getting all the regulatory and affected groups on the same page. It may be critical to getting the regulatory agencies on-side and preventing them from demanding excessively onerous or irresponsible licence terms at the water licence hearings.

Dave S.

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Memo

Deloitte & Touche

Date: October 6, 2003

To: File

From: Shannon Glenn

Subject: Screening Reports

This file contains two draft EAA screening reports (YERC and public) as well as the final EAA screening reports. For the draft screening reports, stakeholder comments as well as D&T response are included.

The CEAA screening report is also included.

Map Search
EHS
- 1 ARMC Interim Receivership
- 2 Contact Information
- 3 EHS, TAC Reports and Data
- 4 Listing of Final Project & Study Reports
- 5 eRoom Reference Material
- 6 Collaboration Area
  - 1. Open Discussion Forum Anvil Range
  - 455-01 Fresh Water Supply Dam (FWSD)
  - 455-02 Environmental Maintenance (ENVMNT)
  - 455-03 Rose Creek Tailings (RCT)
  - 455-04 Renewable Energy (RNNRG)
  - 455-05 Risk Based Management (RBMGT)
  - 455-06 Vangorda Acid Rock Drainage (VARD)
  - 455-07 Vangorda Water Treatment (VWT)
  - 455-09 Water Licence Renewal (H2OLR)
    - 1. RFPs
    - 2. Communications
      - Baseline Table of Contents
      - Bi-lateral agreement
      - Comments on EAR
      - Draft EAR
      - EAR Guidelines and scope of screening
      - EAR methodology
      - EAR Screening report
      - GLL Communication Records
      - H20LR-m-030802-Anvil Range_Agenda_April 14 17.doc
      - H20LR-m-030802-Anvil

EAR Screening report

a note created by Shannon Glenn on 13 Aug 03

A draft screening report was received August 13. SG read and went overhighlights with Wes and circulated to GLL for comments.

SG requested from Leslie a time to provide preliminary feedback. SG also pointed out to Leslie Gomm an error: on page 50, s. 8.2.1.6, the text mentions that the Little Creek Dam is pumped to Vangorda Creek. It is actually pumped to the Vangorda Pit and treated (p. 5.18 of Volume I of EAR, s.5.3.2.1).

Received a call from Leslie: went through a few points (closure criteria and CCME guideline questions on page 46). She will send an erratum regarding the error noted above.

Regarding the bi-lateral agreement, Angus Robertson has apparently sent out a letter to the Kaska telling them that Section 3.3 of the Agreement does not apply to Anvil Range.

Comments

GLL and D&T call (Shannon Glenn, Deloitte & Touche, 14 Aug 03 4:02pm)
Eric, Steve and Shannon went through the report page by page to prepare for a call with Leslie August 15 2003.

Conversation with Leslie Gomm (Shannon Glenn, Deloitte & Touche, 20 Aug 03 2:36pm)
GLL and SG had a conversation with Leslie Gomm

Notes from the call were accidentally deleted by eroom.

Next steps involve GLL to draft email with small typos to send to Leslie (by August 22), as well as email to SG with bullets for formal response. Aiming for a draft formal response to Leslie for August 25 2003.

Received public draft screening (see attached) (Shannon Glenn, Deloitte & Touche, 8 Sep 03 2:48pm)
and commented on it (see attached).

Phone call with Leslie Gomm (Shannon Glenn, Deloitte & Touche, 25 Sep 03 2:23pm)
Leslie Gomm was finalizing the screening report. Responses have been received from the Town of Faro and Ross River, both of whom hired a technical consultant (by Kaska for Ross River).

She added the following two mitigations:
1) AMP: no AMP for degraded water in the Vangorda Creek. Asked for an expansion of the trigger for the Grum Rock Dump.

2) Aquifer of Town of Faro: asked for a hydrogeological evaluation. Apparently, according to Bud McAlpine, this has already been done in the

Range_Workshop Agenda_FEB 20.doc
H2OLR-013003-m-Licensing strategies going forward.doc
Linkage with Project Team
Planning of Open Houses
Project Description Inputs
RERC meetings
Ross River TK for EAR
Vegetation sampling design and agency comments
Water Board Hearing
Water Board Pre-hearing
Weekly Tuesday conference calls, starting July 30
3. Working Papers
4. Interim Reports
5. Discussion Forum
455-10 Faro Water Treatment (FWT)
455-11 Mass Loading Balance (MLB)
455-12 ESA Concentrate Load-out (ESACL)
455-13 Dam Safety Reviews 2002 (DSR'02)
455-14 Emergency Response Plan (ERP)
455-15 ARD study
455-17 Basic Engineering Inputs 2003 (BEI03)
455-18 ARD Monitoring and Lab Studies 2003 (ARD03)
455-19 Faro/Grum/Vangorda Mine Area Technical Studies 2003 (MATS03)
455-20 Faro/Grum/Vangorda Decommission Methods 2003 (MDECOM03)
455-21 Tailing Area Technical Studies 2003 (TATS03)
455-22 Tailings Decommissioning Methods 2003 (TDECOM03)
455-23

past.

Also, in the accidents and malfunctions section, asked for communication protocols in the case of breaks to the Vangorda pipeline or the existing infrastructures (dams).

In the 'studies' section, she added a recommendation, per the Ross River comments, that a TK protocol needs to be developed.

She will be sending the remaining responses to me.

Attachments

YERC Draft Screening Report.msg

Draft response to Draft Screening August 27 2003.pdf

Editorial comments on Draft Screening Report August 27 2003.doc

Faro Public Draft Screening.msg

D&T response to Draft Screening August 27 2003.PDF

D&T Response to Public Draft Screening - September 10 2003.doc

D&T response to Public Draft Screening September 10 2003.PDF

Faro Screening Report.msg

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Deloitte & Touche

August 27, 2003

Ms. Leslie Gomm
Project Assessment Manager
Environmental Assessment Unit
Executive Council Office
P.O. Box 2703
Whitehorse, Yukon Y1A 2C6

Dear Leslie:

Anvil Range Mining Corporation ("Anvil Range") – Response to August 12 2003 Draft Screening

We have received your document *Draft Screening Report on the Anvil Range Mine Complex Water Licence Renewal (2004 to 2008),* (the "Draft Screening"), which relates to our submission of April 29 2003 titled *Anvil Range Mining Corporation (Interim Receivership), 2004 to 2008 Water Licence Renewal, Environmental Assessment Report, April 2003* (the "EAR").

We are writing to outline our comments relating to the Draft Screening, for your consideration in the eventual finalization of the screening report. We understand that you intend to finalize the Draft Screening report by the end of August 2003, followed by the public review period.

Our comments are outlined in a tabular format, in an order that reflects the text of the Draft Screening.

Reference	*Comment*
Sectionn 2.7, § 4	*This assessment is a joint EAA/CEAA assessment carried out under the Environmental Assessment Act (Yukon) in coordination with Federal Responsible Authorities (DIAND and the Department of Fisheries and Oceans).* It may be helpful to clarify for the reader in the first paragraph of Section 2.7, that the environmental assessment was initiated not only as a result of the renewal of the water licence but also because of the federal funding trigger. This additional information would help explain, in the paragraph quoted above, why the environmental assessment is continuing under CEAA, while it is being completed under EAA.
Section 3.1.4.1, § 2	*Environment Canada estimates that approximately 35,000 tonnes of soluble zinc are stored in the tailings.* This information is also referenced on pages 43 and 49 of the Draft Screening. As this information was not provided by the proponent and

contributes partially to the conclusions reached in the Draft Screening, it may be helpful to the reader to provide a reference for this estimate (a study report or a *pers comm.*).

Section 3.1.8.2

The Faro Valley Interceptor Ditch was constructed to intercept runoff from the hillsides north and northwest of the Faro Valley Rock Dump, to be directed into the Faro Creek Diversion. The ditch consists of a small excavation into surficial soils which is currently considered to be conveying a small amount of water compared to its available capacity.

We are pleased to report, since our submission of the EAR, that site staff have completed some maintenance to this ditch such that its performance has improved significantly.

Section 3.2.1.1, § 2

The Vangorda Pit walls have experienced local instability. The northwest end of the pit, which is carbonaceous phyllites and is near several faults, has experienced wall failures that were related to a pit expansion that required the Vangorda Creek Diversion channel to be moved soon after construction.

It may be helpful for the reader to nuance the above statement. Per Section 4.3.1.1. of Volume I of the EAR (page 4.3), "a professional assessment of wall stability was carried out by SRK Consulting (SRK 2002) that assessed the physical stability of the northwest wall along the Vangorda Creek Diversion Flume. The assessment concluded that it is unlikely that any mode of large scale failure of the pit wall below the flume will affect the performance of the flume for a timeframe in of excess of 50 years." However, in keeping with the quoted paragraph of the Draft Screening, it also noted in the EAR that "several areas along the bench face overlooking the Vangorda Creek Diversion flume were of high risk of localized bench scale failures that could damage the flume and short term remediation work was recommended for these areas".

Section 3.7, last bullet

- *"Held in Abeyance" terms and conditions that are specifically related to closure planning or mine abandonment.*

We would like to provide additional clarification regarding these clauses, as provided in our submission of May 20 2003 to the Yukon Territory Water Board, titled *Anvil Range Mine Complex 2004 to 2008 Water Licence Renewal Application Report* ("Application Report")(Section 9.2 p. 9.2). The clauses that are proposed to be "held in abeyance" are those "clauses that require the licencee to implement closure measures according to timeframes that do not correspond to the proposed timeframe for the [Final Closure and Reclamation Plan ("FCRP")] and that may not correspond to the closure measures that are ultimately proposed in the FCRP. Theses clauses are proposed to be held in abeyance for the duration of the new water licence. That is, these clauses would remain in the licence but would be specifically stated as not

having effect for the duration of the licence. In this way, these clauses could come into effect again at the expiry of the licence, if necessary." The Application Report continues, on the same page (9-2) to say that "the closure design criteria that are specified in the current water licences are not immediately affected by the activities of the closure Project Team and, therefore, no changes are proposed to theses clauses." As such, we had proposed that closure criteria be included in the main body of the new licence.

Section 3.8, § 2

3. Long Term Sludge Management Plan – A sludge management plan is required for the duration of the care and maintenance activities to ensure that sludge is managed in an appropriate manner.

The purpose we stated regarding sludge management was that there was a need to develop a short term management plan for the duration of the care and maintenance activities and until such time as a long term plan is developed and implemented as part of the FCRP. As such, we had titled this programme "Treatment Sediment Management Plan" rather than "Long Term Sludge Management Plan". This programme is scheduled to be completed in 2003.

Section 5.1, § 3

The Interim Receiver is planning to breach the FWSD prior to 2004 spring freshet and is undergoing a separate regulatory review process.

It may be helpful clarify that this project is also undergoing a separate environment assessment.

Section 5.2, § 5

The spatial scope for this assessment includes the environment (land, air, water) within and adjacent to the project boundaries, and any other area affected through the administration of the project.

A similar reference to the project boundaries is also made in Section 8.4.1. (Cumulative Environmental effects, page 55) of the Draft Screening. However, we were not able to locate a definition of the term "project boundary". It would be helpful for us to understand whether the boundaries considered in the analysis of the Responsible Authorities ("RA's") correspond to the Local Study Area and Regional Study Areas referenced in our EAR.

Section 7.2, § 2

Regional Study Areas (RSAs) are defined to incorporate data outside of the project footprint that may be important to the determination of direct effects on an environmental component

We suggest also referencing that RSAs were also defined related to effects on socio-economic, traditional use, and heritage resources (see Table 1 of Volume II of the EAR, page 1-9).

Section 8.1, § 2, 3

The proponent also evaluated the project effects on the basis of evaluating effects in the comparison to site conditions from 1998-2002. The RAs do not consider this to be an appropriate approach in that the effects being evaluated are relative rather than absolute in nature. This approach does not allow the reviewers to evaluate potential impacts of the proposed project.

In the Yukon's EAA Practioner's Guide on the determination of significance, it states that the appropriate criteria must be applied to determine if an environmental effect is adverse, significant or likely. It further states that the most common way to determine if effects are adverse is to compare the quality of the environment before the project with the predicted quality of the environment with the project in place. In the absence of any historic pre-mining information of the quality of the environment, background conditions (where available) are being used to assess the change in the receiving environment. This comparison to baseline conditions is essential for the identification of necessary mitigation to minimize or eliminate likely adverse effects in the long term.

In relation to the above paragraphs, we would like to 1) highlight our logic for selecting the approach we adopted and 2) enquire regarding some consistencies of application of the "comparison to pre-mining" (i.e. 'absolute') approach.

Section 1.2.1 of Volume II of the EAR stated that "the context that overarched both the selection of the proposed care and maintenance activities and the development of the environmental assessment (and the assessment framework) is that the Anvil Range property [already] exists as a property resulting from former mining and milling activities. This property has recognized environmental liabilities." Further it was noted that "the assessment framework [...] was developed on the basis that the proponent of the proposed project (the Interim Receiver) is not proposing to start a new mine in the next five years, nor to close the property in the next licence term."

We understand that not only the proponent but also the reviewers were faced with the dilemma of evaluating an existing project within the constraints of environmental assessment legislation and guidelines primarily written for new projects rather than existing projects. We offer the following comments in the spirit that such a dilemma requires parties involved to be flexible regarding approach, provided that the implications of the choices made regarding approach are transparent to all those involved.

The approach we selected was made in recognition that, while the most *common* way of evaluating effects is in relation to pre-project conditions, the relevance of pre-mining information for a property that already exists and the paucity of pre-mining information pointed to an alternative

method of evaluating relative as opposed to absolute effects. As a result, we selected the 'relative' method. This method would also allow us to apply this framework consistently throughout the EAR for effects related to all the VECCs, be it water, wildlife or traditional use.

However, we did recognize that an alternative view (i.e. evaluation of absolute effects) could be taken by the reviewers. As such, we also highlighted in Section 1.2.1, page 1-4 of the EAR, that "it is the understanding of the Interim Receiver that the Responsible Authorities, as well as other interested parties may review the information available around pre-mining, historical and existing conditions with the intent of understanding the impacts of the property itself on the environment in comparison to the pre-mining conditions. It is the understanding of the Interim Receiver that the driver behind this broadened review focus is to underscore the need for closure planning and implementation, by referencing closure planning and implementation as required additional mitigation for this project." As a result, we provided information in Volume II of the EAR (as well as Volume II of the May 2002 Project Description) that we hoped would:

> "1. respect the requirements of the March 11, 2003 Guidelines issued by the [then] DIAND Environment Directorate.
>
> 2. support the assessment of effects related to the proposed care and maintenance activities for 2004-2008 in comparison to those occurring [during] the 1998-2002 time frame.
>
> 3. support the additional review objectives that reviewers of this document may have".

The Interim Receiver understands and is supportive of the 'absolute' approach adopted by the RAs and is pleased that the information we provided allowed for the adoption of this approach. We note, however, that the 'absolute' approach was primarily used for the water quality VECCs, while the 'relative' approach appears to have been followed for traditional, and socio-economic VECCs. For example, on page 51, it is stated that *"The project does not contribute further to traditional or recreational fishing in any way that poses the potential for significant adverse effects on local fish populations"*. Similarly, on page 54, it is mentioned that *"Based upon the environmental effects assessment, there are no environmental changes that would affect continued commercial, subsistence, or recreational use of the regional area"*. Finally, in the case of air quality (page 52), it was unclear to us whether the analysis was based on absolute measurement or relative comparison.

We suggest that the rationale regarding the application of 'absolute' and 'relative' approaches in the Draft Screening be clarified.

Section 8.2

For this section in general, it would be helpful for us to understand the process by which the mitigation measures noted in the section are brought forward into Section 10.0 (Follow-up Program).

Section 8.2.1, § 11

Water quality will likely continue to deteriorate in groundwater under the tailings and downgradient of waste rock dumps. While the proposed care and maintenance project provides for short-term mitigation of the effects of the deterioration of the site, ongoing degradation of the receiving environment will only be mitigated through the implementation of a long term closure plan.

We suggest highlighting, in the above paragraph, the Adaptive Management Plan ("AMP"), which supplements the care and maintenance program. The AMP is designed to ensure that appropriate and timely actions will be undertaken in the event of changes in effects related to rock dumps or tailings.

Section 8.2.1, § 14

The assessment of effects outlined above is based on existing CCME criteria for the various parameters including zinc. Recently CCME has been looking at changing the zinc objective to one based on hardness. Based on discussions with technical experts from Environment Canada, this will result in receiving water objective for Rose Creek of 0.007 mg/l in the summer and 0.2 mg./l in winter. Presently CCME for zinc is set at 0.03 mg/l. To mimimize impacts on the receiving water, the proponent should evaluate the proposed water management regime to investigate possible modifications that could be made to the discharge scenarios to incorporate the proposed modification to the zinc receiving water criteria.

We note that this recommendation is based on two assumptions: 1) that the proposed changes to the CCME guidelines will be implemented and 2) that the generic or Tier 1 CCME Guidelines will ultimately be applied as the long term criteria as opposed to the development of site specific water quality objectives following the procedures described in the CCME Guidelines. As such, we suggest adding that the fulfillment of this recommendation be predicated on the prior confirmation of these two assumptions. Also, we were unclear as to whether the above paragraph applied to the care and maintenance time frame or the closure (post 2008) timeframe.

Section 8.2.1.6

Under the proposed care and maintenance plan, water from Little Creek Dam is pumped to Vangorda Creek on an as-required basis...

The water is pumped to Vangorda Pit on an as-required basis.

Section 8.2.2., Mitigation

To facilitate the development of the proposed Final Closure and Reclamation plan, the proponent is required to continue monitoring activities for fish presence and metal content in fish over the period of

this project.

The presence of fish and metal content in fish were studied as a special project during the summer of 2002 in support of the development of the EAR. Under the terms of the current licences, the Interim Receiver is not required to monitor these variables under its regular monitoring schedule. While the Interim Receiver is supportive of the need to further understand the presence of fish and the impact of the property on fish, we submit that this type of study be undertaken in the context of closure planning rather than under care and maintenance.

Section 10.0

In relation to our comment regarding 8.2. (Project Effects on Environmental Components), we suggest a clarification of the rationale adopted for selecting some of the mitigation elements described in Section 8.2. and bringing them forward to Section 10.0 (Follow-up Program).

Closing

We thank you for providing us an opportunity to comment on the Draft Screening. We look forward to the successful completion of the Environmental Assessment process. In the meantime, we remain available for any questions from yourself and/or interested parties regarding our comments or any other matter relating to this interim receivership.

Yours very truly,
DELOITTE & TOUCHE INC.
in its capacity as Interim Receiver of
ANVIL RANGE MINING CORP.

Shannon Glenn
Senior Manager, Environmental Services
Enterprise Risk Services

c. Joanna Ankersmit, DIAND
Marg Crombie, GY, Type II Mines Project Office
Robert Lauer, DIAND
Murray Leitch, Miller Thomson LLP
Stephen Morison, Gartner Lee Limited
Dave Sherstone, DIAND - Type II Mines Project Office
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Memo

Deloitte & Touche

Date: August 27, 2003

To: Leslie Gomm, GY Executive Council Office, Environmental Assessment Unit

From: Deloitte & Touche Inc. (in its capacity as Interim Receiver for Anvil Range Mining Corporation)

Subject: Editorial comments related to the August 12 2003 Draft Screening report on the Anvil Range Mine Complex Water Licence Renewal (2004 to 2008)

Editorial Comments

Location	Comment
Pg 1, para. 1	Reference dates should be 2004-2008 and not 2003-2008
Pg 1, para. 2	" ... was appointed Interim Receiver of Anvil Range *Mining Corporation* "
Pg 2, para. 4	Suggest alternate wording of "complete this assessment as expediently as possible". Also... « *its* regulatory duties »
Secn 2.7, para 1	Suggest starting the third sentence with "At the time of the submission".
Pg 6, para 1	« ...was placed into *Interim* Receivership... »
Secn 3.1.1, para. 3	Consider rewording "The Faro Main Pit is prone to flooding ..." to "The pit was allowed to flood from runoff, seepage inflows and tailings inflows from 1992 to 1997. In 1997, the water elevation had reached the desired maximum range, as defined in Kilborn 1991 at approximately 15 m below the lowest overflow elevation." or similar to clearly state that the pit was allowed to flood to the desired elevation which was safely below the overflow level.
Sec 3.1.2, para 1	Units 0.27 m^2 should be 0.27 km^2.
Secn 3.1.3.1, para 1	Consider using "..., the Northwest rock dumps ..." in place of "..., these dumps ..." to ensure that the subsequent info. is clearly stated as referencing only the NW dumps and not the NW plus Parking Lot dumps per the subsection title.
Secn 3.1.3.1, para. 3	Consider rewording "These dumps are known to contain scrap metal." to "Boneyards of scrap steel and other miscellaneous waste materials are present on the Parking Lot dumps" to avoid an implication that we know that scrap steel is present within the rock dump itself.
Secn 3.1.3.2, para. 2	The Faro Valley dump does not "impound" water in the sense that a dam or dyke does; rather an upgradient head pond with a highly variable water level is created by the dump acting as a rock drain; consider rewording "impounds" to the above.
Secn 3.1.3.3, para. 2	Insert "... except for some surficial slumping above the rock drain" after
Secn 3.1.3.4, para. 2	Suggest reword "Seepage from these dumps report through groundwater to the North Fork of Rose Creek." to "Seepage from these dumps reports to: the North Fork of Rose Creek (via surface seeps and shallow subsurface flow), and to the Main pit or to the Zone II pit."
Secn 3.1.4.1.3, para. 1	Missing word "... , and *retains* non-compliant water and tailings solids."
Secn 3.1.7.1,	Add "... within the tailings containment area." after ""general increase in zinc

Location	Comment
para. 1	concentrations"
Secn 3.1.8.5	Reword "culverts under the haul road" to "culverts near the Cross Valley Pond".
Secn 3.2.2.1, para. 2	Reword "Seepage from sulphide cell is collected ..." to "Seepage from both cells is collected ...". (a subsequent section explains that the phyllite cell seepage is collected via the collection ditch)
Secn 3.2.4	Insert "The plant is scheduled for annual *or bi-annual (every second year)* operation..." per the EAR.
Secn 3.2.6.2	"The dam shows no sign of..."
Secn 3.5.1.2, para. 4	Insert "An inventory ... was completed to allow a *conceptual order of magnitude* waste volume to be prepared, and to ..." per the EAR.
Secn 3.5.1.2, para. 5	Insert "With a final cover of *an assumed* 1.15 m thickness ..." per the EAR.
Secn 3.6	First sentence "... includes *an* Adaptive..."
Secn 3.7, Para 1	Consider referencing the comment that the "mine is not considered to be economically viable" back to the DIAND letter or other relevant sources?
Secn 5.1, Para. 2	Reword "The scope of the project is limited to ... in accordance with prior regulatory processes." to "The scope of the project is limited to ... in accordance with the activities and monitoring protocols described in the EAR." (this recognizes that there are a number of changes to prior regulatory requirements proposed in the EAR)
Secn 5.1, Para 3	Expand on the description of the separate processes being undertaken for the FWSD project that includes both EA and regulatory processes.
Pg 33, para. 6	"granular"
Pg 35, para. 4	"they represent"
Secn 7.2, para. 1	Question re. the relation of the LSA to the "area of interest as per the water licences"; the areas covered in the licences extends beyond the LSA(?)
Secn 7.3.2.1	We can provide a copy of the fish habitat map of the EAR for reference in this section, if desired.
Secn 7.3.2.1, para. 2 (after bullets)	Suggest removal of "juvenile and spawning" to read "Presently in Rose Creek Arctic grayling is the predominant species."
Secn 7.3.2.2.	"species found *in* the Rose Creek watershed"
Secn 7.3.4, Para 1	Reword "There is no wildlife data in the local study area" to "There is no scientific data specific to wildlife habitat in the local study area" or similar which would recognize the anecdotal evidence from RRDC and others re. wildlife use of the immediate mine area.
Pg 37, para. 2	"in 1976"
Pg 37, para. 5	"plateau"
Secn 7.3.5.1.	Last line: add word "regional"
Secn 7.4, Para. 6	Reword "... 4 known faults ..." to " 4 known major fault zones ...".
Secn 8.2.1, para. 2	It is not clear the meaning or relevance of the statement that "... it is recognized that any impacts in water will result in impacts to fish."; it is possible to have an observable effect on water (say a small but observable increase in one heavy metal) without a resulting observable effect on fish or other aquatic resources.
Secn 8.2.1, para. 6, Last bullet	The meaning of "Dilution effect of Anvil Creek" is unclear; consider expanding this to say that "no impact is anticipated" or similar if this is a correct interpretation of the RA's assessment.
Secn 8.2.1, para. 7, last bullet	Ibid re. "Dilution effect."
Pages 44 & 45 4 figures	Consider adding the n value (i.e. number of samples averaged) for each location and each parameter to provide additional context for the interpretation of results.
Secn 8.2.1,	Suggest reword first sentence re. "... as reclamation is delayed ..." to "... while the FCRP is

Location	Comment
para. 16	being developed ..." as recognition that reclamation planning has been committed to by the federal and territorial governments and is currently underway as a necessary step of the reclamation process.
Secn 8.2.1.3, para. 4, Mitigation measure	Suggest reword of "... that meets with the long term closure objective of the site." to "that meets longer term objectives for the site" as this clause may preclude any ability of the proponent to perform interim or progressive reclamation work before the FCRP (including the proposed long term objectives) is finalized and approved.
Secn 8.2.2, para. 2 (after bullets)	As commented above, it is not clear the meaning or relevance of the statement that "... it is recognized that any impacts in water will result in impacts to fish."; it is possible to have an observable effect on water (say a small but observable increase in one heavy metal) without a resulting observable effect on fish or other aquatic resources.
Secn 8.2.5	"through reduced fitness or *through* mortality"

Yukon Conservation Society INC. 1968
302 Hawkins St. Whitehorse, Yukon Y1A 1X6 (867)668-5678 fax: (867)668-6637 ycs@ycs.yk.ca

Leslie Gomm
Manager, Project Assessment
Environmental Assessment Unit
Yukon Government
Box 2703
Whitehorse, Yukon
Y1A 2C6

August 20, 2003

Dear Leslie Gomm;

Re: YERC Review of the Draft Screening Report for the Anvil Range Mine Complex 2003-2008 Water Licence Renewal

I am writing on behalf of the Yukon Conservation Society to respond to the YERC Review of the Draft Screening Report for the Anvil Range Mine Complex 2003-2008 Water Licence Renewal. Our main concern is that the current care and maintenance plan does not clearly assess the activities that will change as the work increasingly moves toward site closure.

The plan should give better direction on the way care and maintenance work will be conducted as final remediation processes begin. For example, the Adaptive Management Program may need to identify additional trigger locations and sample more frequently to provide sufficient seasonal information on water quality to be used for decisions in closure. YCS agrees that the data must provide "statistically appropriate results".

During the January 21-22, 2003 meeting in Whitehorse it was our impression that closure planning for the Faro mine site would have a clear role for community involvement. No details have been provided in Section 6.0 for the Consultation Program. YCS has had a long history of involvement with the Technical Advisory Committee, yet we are not being included in closure discussions. YCS firmly believes that a clear and transparent public process must begin earlier than later. For example, criteria for decision-making should be agreed upon by all concerned before commissioning studies and initiating remediation. If there is not a level playing field to compare options for remediation, the choice of alternatives will not be made based on an accurate comparison of economic feasibility, environmental outcome and ultimate stability of the site for perpetuity. The quality of remediation decisions can ultimately be improved and reduce future costs with more upfront discussion on priorities for closure.

Please do not hesitate to call YCS to discuss ways to better involve the Yukon communities concerned about the closure of the Faro mine site. We look forward to contributing to this process that is important to the long-term health of the Yukon environment.

Sincerely,

Sue Moodie, M.Sc.
Mineral Policy and Program Coordinator
Yukon Conservation Society

August 25, 2003

Ms. Leslie Gomm
Manager, Project Assessment
Environmental Assessment Office
Executive Council Office
Yukon Government
Box 2703
Whitehorse, Yukon
Y1A 2C6
Fax 667-3216

Dear Ms. Gomm:

Re : YERC Review of the Draft Screening Report for the Anvil Range Mine Complex 2003 – 2008 Water Licence Renewal

The Yukon Salmon Committee has the following comments on the draft screening report.

The Committee is satisfied by most of the elements contained in the proposed water licence renewal, however we are concerned with what is being left out of this licence. The proposal is for a 5-year care and maintenance water licence. The process of developing a reclamation plan for the Faro site will be undertaken by a separate entity with no guarantee of participation or transparency.
Our foremost concern is the development of a reclamation plan during the 2003 -2008 period. The main task that must be undertaken in the next 3 years is the development of a comprehensive, integrated reclamation plan for the Faro site. The Salmon Committee was assured more than a year ago that this process would be open and transparent. To date, there seems to have been little progress in developing this plan and all activity has taken place behind closed doors, excluding some members of the Technical Advisory Committee and other government departments as well as co-management bodies established under the Umbrella Final Agreement.

The Committee is concerned that studies are being developed and undertaken and decisions being made without participation by all the necessary parties. We are concerned that parties not currently involved in the development of the reclamation plan

...2/

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will be presented with a reclamation plan in which options have been eliminated and plans developed without consultation.
We are also concerned that we will be given massive quantities of information without the necessary resources or time to adequately review and comment on any proposed reclamation plan.

The Salmon Committee believes that any water licence must ensure that:

1. Closure planning is being moved forward in a timely, open and transparent manner.
2. Reclamation is mandated to begin on a specific date.
3. The Technical Advisory Committee, with an expanded membership, continues to exist and have a role in reclamation planning.
4. That co-management bodies have a role in reclamation planning.
5. All opportunities for progressive reclamation be taken advantage of during the 2003-2008 period.
6. Security appropriate to the environment risk be required for this water licence.
7. The issue of funding for reclamation be thoroughly reviewed before issuing a water licence.
8. The structure of the Trusteed Environmental Fund TEF and the Reclamation Security Trust be reviewed and the issue of who controls the release of those moneys be resolved.

Thank you for the opportunity to comment on the draft screening.

Sincerely,

Lorelei Smith
Yukon Salmon Committee, Chair

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September 10, 2003

Ms. Leslie Gomm
Project Assessment Manager
Environmental Assessment Unit
Executive Council Office
P.O. Box 2703
Whitehorse, Yukon Y1A 2C6

Dear Leslie:

Anvil Range Mining Corporation ("Anvil Range") – Response to August 12 2003 Draft Screening

We have received your document *Public Draft Screening Report on the Anvil Range Mine Complex Water Licence Renewal (2004 to 2008),* (the "Public Draft Screening"), which relates to our submission of April 29 2003 titled *Anvil Range Mining Corporation (Interim Receivership), 2004 to 2008 Water Licence Renewal, Environmental Assessment Report, April 2003* (the "EAR").

We thank you for the opportunity we had to provide our comments on an earlier draft of this document, dated August 12th 2003, which had been circulated to the Yukon Environmental Review Committee (YERC). We understand that our letter to that effect, dated August 27 2003, was included in the public registry.

We are writing to outline our comments relating to the Public Draft Screening, for your consideration in the eventual finalization of the screening report. We understand that you intend to finalize the Draft Screening report by the end of September 2003, following the public review period.

Our comments are outlined in a tabular format, in an order that reflects the text of the Public Draft Screening.

Reference	*Comment*
Section 3.6, last bullet	• *"Held in Abeyance" licence terms and conditions that are specifically related to closure planning or mine abandonment. This includes clauses that require the licencee to implement closures according to timeframes not consistent with that of the Final Closure and Reclamation Plan (FCRP). This does not include the closure design criteria. These clauses will be included in the licence.*
	These clauses also need to be verified for internal consistency prior to implementation to ensure that activities required by one clause do not conflict with the objectives of another clause or activities related to its

implementation. As such, per our submission of May 20 2003 to the Yukon Territory Water Board, titled *Anvil Range Mine Complex 2004 to 2008 Water Licence Renewal Application Report* ("Application Report")(Section 9.2 p. 9.2), "theses clauses are proposed to be held in abeyance for the duration of the new water licence. That is, these clauses would remain in the licence but would be specifically stated as not having effect for the duration of the licence. In this way, these clauses could come into effect again at the expiry of the licence, if necessary." The Application Report continues, on the same page (9-2) to say that "the closure design criteria that are specified in the current water licences are not immediately affected by the activities of the closure Project Team and, therefore, no changes are proposed to theses clauses." As such, we had proposed that closure criteria be included in the main body of the new licence.

Section 8.2

For this section in general, it would be helpful for us to understand the process by which the mitigation measures noted in the section are brought forward into Section 10.0 (Follow-up Program).

Section 8.2.1, § 14

The assessment of effects outlined above is based on existing CCME criteria for the various parameters including zinc. Recently CCME has been providing guidance on how to develop site-specific zinc receiving water objectives based on hardness. Other jurisdictions (i.e. British Columbia) have adopted the hardness modifications in their objectives. Based on discussions with technical experts from Environment Canada, this will result in receiving water objective for Rose Creek of 0.007 mg/l in the summer and 0.2 mg./l in winter. Presently CCME for zinc is set at 0.03 mg/l. To minimize impacts on the receiving water, the proponent should evaluate the proposed water management regime to investigate possible modifications.that could be made to the discharge scenarios to incorporate the hardness modification to the zinc receiving water criteria. This should include the effects that groundwater may have on surface water.

We note that this recommendation is based on two assumptions: 1) that the proposed changes to the CCME guidelines will be implemented and 2) that the generic or Tier 1 CCME Guidelines will ultimately be applied as the long term criteria as opposed to the development of site specific water quality objectives following the procedures described in the CCME Guidelines. As such, we suggest adding that the fulfillment of this recommendation be predicated on the prior confirmation of these two assumptions. Also, we were unclear as to whether the above paragraph applied to the care and maintenance time frame or the closure (post 2008) timeframe.

Section 8.2.2., Mitigation	*To facilitate the development of the proposed Final Closure and Reclamation plan, the proponent is required to continue monitoring activities for fish presence and metal content in fish over the period of this project.* The presence of fish and metal content in fish were studied as a special project during the summer of 2002 in support of the development of the EAR. Under the terms of the current licences, the Interim Receiver is not required to monitor these variables under its regular monitoring schedule. While the Interim Receiver is supportive of the need to further understand the presence of fish and the impact of the property on fish, we submit that this type of study be undertaken in the context of closure planning rather than under care and maintenance.
Section 10.0	In relation to our comment regarding 8.2. (Project Effects on Environmental Components), we suggest a clarification of the rationale adopted for selecting some of the mitigation elements described in Section 8.2. and bringing them forward to Section 10.0 (Follow-up Program).

Closing

We thank you for providing us an opportunity to comment on the Draft Screening. We look forward to the successful completion of the Environmental Assessment process. In the meantime, we remain available for any questions from yourself and/or interested parties regarding our comments or any other matter relating to this interim receivership.

Yours very truly,
DELOITTE & TOUCHE INC.
in its capacity as Interim Receiver of
ANVIL RANGE MINING CORP.

Shannon Glenn
Senior Manager, Environmental Services
Enterprise Risk Services

c. Joanna Ankersmit, DIAND
Marg Crombie, GY, Type II Mines Project Office
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September 25, 2003

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Re: Screening Report for the Anvil Range Mine Complex 2004 – 2008 Water Licence Renewal

As required under the *Environmental Assessment Act (Yukon)* (EAA), the Government of Yukon (GY) has completed its screening of the Anvil Range Mine Complex (2004 – 2008) Water Licence Renewal project.

Attached is the final version of the EAA Screening Report, in which GY has reached a section 16(1)(a) determination under the Act, which states the following:

"...where, taking into account the implementation of any mitigation measures that the responsible authority considers appropriate, the project is not likely to cause significant adverse environmental effects, the responsible authority may exercise any power or perform any duty or function that would permit the project to be carried out and shall ensure that any mitigation measures that the responsible authority considers appropriate are implemented."

This concludes GY's EAA screening of the Anvil Range Mine Complex Water Licence Renewal project. Thank you for your assistance during this assessment. Please contact Leslie Gomm at (867) 456-3865 or email leslie.gomm@gov.yk.ca should you have any questions on this assessment.

Sincerely,

Micheal McBride
Director, DAP Unit
Executive Council Office
Government of Yukon

cc. Distribution List

SCREENING REPORT ON THE ANVIL RANGE MINE COMPLEX WATER LICENCE RENEWAL (2004 to 2008)

Deloitte & Touche Inc. in their capacity of Interim Receiver for Anvil Range Mining Corporation

September 25, 2003

Prepared by: Environmental Assessment Unit, Executive Council Office
Government of Yukon

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1.0 INTRODUCTION

The purpose of this report is to summarize the results of an environmental assessment that was conducted on the Anvil Range Mine Complex Water Licence Renewal (2004 – 2008). The assessment was conducted pursuant to section 14 of the *Environmental Assessment Act (Yukon)* (EAA), and includes a consideration of the factors set out in subsection 12(1) of the EAA.

2.0 Project Overview

2.1 Background

The Anvil Range Mine Complex, located in Faro, Yukon, operated from 1969 to 1998 inclusive of several temporary closures. Mining and milling operations ceased in early 1998 after which Anvil Range Mining Corporation filed for creditor protection under the *Companies' Creditor Arrangement Act* (CCAA). Deloitte & Touche Inc. was appointed Interim Receiver of Anvil Range Mining Corporation pursuant to an order of the Ontario Court (General Division) (now the Superior Court of Justice) in April 1998.

The mine complex is located approximately 20 km from the Town of Faro, which was initially constructed in 1968/69 specifically to house employees of the mine. The mine complex is also located within the traditional territory of the Kaska Nation. The Ross River Dena First Nation is based in the community of Ross River, located approximately 65 km east of the mine complex (Appendix B - Figure 1). The traditional territory of the Selkirk First Nation is located downstream of the site.

The facilities of the former lead-zinc mine complex span a length of approximately 20 km and occupy a footprint of approximately 1500 hectares. The mine complex consists of three large open pit mines up to 365 m deep, approximately 700 million tonnes of waste rock, a 13,500 tonnes per day mineral concentrator plant that produced both lead and zinc concentrates, approximately 54 million tonnes of tailings in surface impoundments, several water retention dams and diversion channels, a 13 km heavy haul road and other ancillary buildings.

2.2 Current Project

The project subject to this screening consists of the physical works at the site and the undertakings and related activities required for the care and maintenance of the Anvil Range Mine Complex for the five year term of the proposed water licence (2004 to 2008). These activities include ongoing care and maintenance of the site, new activities and undertakings, adaptive management program and ongoing studies.

Abandonment and reclamation of the Anvil Range Mine Complex is not included as part of the project being assessed. The Department of Indian Affairs and Northern Development (DIAND) and Government of Yukon have removed the responsibility for

the abandonment and reclamation of the site from the Interim Receiver and have made it a direct government responsibility. As laid out in the Anvil Range Mine Complex Closure Planning Project Management (June 2003), the development of the Final Closure and Reclamation Plan (FCRP) for the Anvil Range mine site is the ultimate responsibility of a joint government project team (DIAND/GY), Type II Mines Project Office.

2.3 Purpose/Need of the Project

The purpose of the project is to provide for continued care and maintenance of the site to ensure compliance with water licence(s) and to allow for sufficient time for the development and approval of a Final Closure and Reclamation Plan (FCRP).

2.4 Timing Considerations

The current water licences expire on December 31, 2003. It is the RAs' objective to complete this assessment in sufficient time to allow for the regulatory process to be conducted and a new (combined licence) to be issued assuming that the EAA section 16(1) determination is that the RAs may exercise their regulatory duties and functions that would permit the project to be carried out.

2.5 Regulatory, Policy and Planning Context

2.5.1 Faro Mine Site

Anvil Mining Corporation began operations at the Faro mine site in 1969. At that time there was no regulatory regime in place for mining or environmental assessment in the Yukon. The first water licence for the site was issued in February 1975 to Cyprus Anvil Mining Corporation for the Faro mine and mill site. This licence was renewed on December 1, 1979 with an expiration date of November 30, 1984.

In March 1982 a new water licence was issued to Cyprus Anvil to accommodate the expansion of the Rose Creek Tailings Facility, including the construction of the Intermediate and Cross Valley Dams. This licence was set to expire in March 1989. Mining at the site shut down in June, 1982 and did not resume again until 1986 under the ownership of Curragh Resources. An emergency amendment assigned the existing water licence to Curragh on October 4, 1985. Two subsequent amendments to this water licence were requested and granted on November 18, 1988 and September 22, 1989, respectively.

In January 1990, the Yukon Territory Water Board issued Licence IN89-001 as a renewal of a previous licence issued in 1985. This licence authorized operation of the Faro mine until January 1997.

In July 1991, Curragh Resources submitted the Water Recycle and Tailings Deposition Plan, Kilborn Report 350928, and applied for an amendment to incorporate this plan into their water licence. The Regional Environmental Review Committee (RERC) completed

an environmental screening, under the Environmental Assessment and Review Process Guidelines Order (EARPGO), of the operational aspects of the above plan. The project received a 12(c) decision under EARPGO (project may proceed with mitigation). In October 1991, the YTWB amended the licence to allow for the processing of Vangorda and Grum ore and for the deposit of the resulting tailings behind the Intermediate Dam or in the Faro Pit as outlined in the Kilborn Report.

The licence was further amended in December 1991, with changes to the security and trust provisions. This amendment was also screened under EARPGO and received a 12(c) decision.

The third amendment, approved in July 1993, was based upon the Down Valley Tailings Impoundment Decommissioning Plan submitted in April 1991, and the decommissioning aspects of the Kilborn Report submitted in July, 1991. The Down Valley Tailings Impoundment Decommissioning Plan outlined several options for decommissioning of the tailings impoundment. Curragh Resources indicated that the preferred decommissioning option involved reprocessing of tailings and placement in the mined-out Faro Main pit. The RERC completed a screening report which recognized concerns related to the technical and economic feasibility of the proposed tailings abandonment options, especially tailings reprocessing. The report also recognized that those options would require additional review before the impacts could be fully assessed. As a result, the report recommended that Curragh Resources provide a viable alternative, in the absence of information on technical and economic feasibility of the tailings reprocessing option. The screening further noted that an overall decommissioning plan was required for all components of the Faro mine and recommended that an "Integrated Comprehensive Abandonment Plan (ICAP)" be submitted for review and approval. Based upon the absence of either adequate technical and economic feasibility studies or an alternative decommissioning plan, the screening report recommended a 12(d) decision (environmental effects unknown).

At the YTWB hearing, Curragh Resources submitted a proposal for an alternative decommissioning strategy and recognized that additional studies would be required before a decommissioning plan could be finalized. Based on this additional information, the project received a 12(c) decision under EARPGO. The amendment identified specific closure measures for the Down Valley Tailings Impoundment. This amendment also required completion of groundwater studies, changed the monitoring requirements, required completion of abandonment studies, required completion of a tailings reprocessing feasibility study and required submission of an Integrated Comprehensive Abandonment Plan.

The fourth amendment, approved in September 1993, revised the date for submission of the Tailings Reprocessing Feasibility Study. At this time, Curragh Resources also requested an extension for the date of submission of the ICAP. The YTWB did not grant this request. The fourth amendment received a 12(c) EARPGO decision.

In November 1994, the YTWB authorized an assignment of Curragh's water licences to Anvil Range Mining Corporation (Anvil Range).

Anvil Range requested several amendments to their existing licence for the operation of the Faro Mine. The amendments were outlined in their application dated June 8, 1995 and subsequent information provided on September 14, 1995 and July 31, 1996. This amendment application (QZ95-003) underwent an environmental assessment pursuant to the *Canadian Environment Assessment Act* (CEAA) and received a 20(1)(a) determination (taking into account mitigation, not likely to cause significant adverse effects). QZ95-003 was issued in January 30, 1998. Licence QZ95-003 included some reorganization of the reclamation security fund, introduced the Reclamation Trust Indenture and included an extension the of the expiry date to December 31, 2003 to coincide with that of Vangorda Plateau.

A series of brief amendments to the Faro licence were issued during the time of review of application QZ95-003, extending the term of the existing licence for brief periods until the new licence was issued.

2.5.2 Vangorda Plateau

In March 1987, Curragh Resources Inc. submitted the Long Range Plan Development Plan to DIAND. This document outlined their plans for the development of the Vangorda Plateau. In May 1987, the Vangorda Project was referred to the RERC and underwent an environmental assessment under the EARPGO. Curragh submitted an application for a water licence for the Vangorda Plateau development on December 18, 1989. On October 2, 1990 the project received a 12(c) decision under EARPGO (project may proceed with mitigation). In September 1990 a water licence (IN89-002) was granted to Curragh Resources. This licence is valid until December 31, 2003.

2.6 Current Environmental Assessment Process

On May 31, 2002, Deloitte and Touche Inc. submitted their Anvil Range Mining Corporation - Interim Receivership Project Description to DIAND. The Anvil Range project triggered an environmental assessment pursuant to the *Canadian Environmental Assessment Act* (CEAA). The Project is for the care and maintenance of the site for 2004-2008 involving the application to amalgamate two existing water licences into one. The project was, as such, required to undergo a Screening under CEAA. Upon receipt of the Project Description Report, DIAND undertook a review as laid out in the Regulations Respecting the Coordination by Federal Authorities of Environmental Assessment Procedures and Requirements as required under CEAA, to determine which federal departments are Responsible Authorities (RAs). The DIAND determined that it was a RA under CEAA through the water licence trigger and as the sole funder of the Interim Receiver. At that time, the Department of Fisheries and Oceans (DFO) also identified themselves as a RA but given further review have determined that they have no regulatory trigger and as such are not a RA. The Project Description Report also

underwent a public/governmental review with comments from this review included in these guidelines, and forwarded to Deloitte and Touche Inc.

On March 10, 2003 DIAND Environment Directorate issued Environmental Assessment Report (EAR) Guidelines developed by the RAs, incorporating, where appropriate, the comments received during the review of the Project Description. Stakeholders were given an opportunity to comment on these guidelines and their comments were considered and incorporated as appropriate.

On April 1, 2003, the resources and responsibilities of the Northern Affairs Program (NAP) of DIAND were transferred from Canada to the Government of Yukon under the Yukon Northern Affairs Program Devolution Transfer Agreement (2001). As a component of the transfer of responsibilities, the *Environmental Assessment Act (Yukon)* (EAA) was passed as legislation that mirrors CEAA. Subsequently, all environmental assessments of NAP related projects conducted in the Yukon pursuant to CEAA not completed by April 1, 2003 will be completed by the Government of Yukon, pursuant to EAA. As well, the *Waters Act (Yukon)* was passed as mirror legislation of the *Yukon Waters Act* and subsequently the Government of Yukon became the RA for the water licence trigger.

In April 2003 Deloitte & Touche Inc, in their capacity as Interim Receiver, submitted the EAR for the Anvil Range Mining Complex Water Licence Renewal Project. This assessment is a joint EAA/CEAA assessment carried out under the *Environmental Assessment Act (Yukon)* in coordination with Federal Responsible Authorities (DIAND) as per the intent of the Draft Canada-Yukon Agreement on Environmental Assessment (2003).

3.0 PROJECT DESCRIPTION

The Faro and Vangorda Plateau mine sites were in production from 1969 to 1982 and from 1986 to 1998. Ownership changed four times between 1969 and 1994 (Anvil Mining Corp. [1969], Cyprus Anvil Mining Corp. [1975], Curragh Resources [1986], and Anvil Range Mining Corp. [1994]). Anvil Range Mining Corporation was placed into Interim Receivership in 1998, since which time Deloitte & Touche Inc. have managed the mine sites as court-appointed Interim Receiver.

The Faro deposit was discovered in 1964 and brought into production in 1969 by Anvil Mining Corporation, initially producing 5,000 tonnes/day. When Curragh restarted operations in 1986 total production was approximately 13,500 tonnes/day. Curragh initiated development of the Grum and Vangorda ore deposits in 1988.

Ore production began at the Vangorda Plateau mine site in 1992. Two open pits were developed: Vangorda and Grum. All ore was hauled by truck to the mill at the Faro mine site (approx. 15 km), and all milling activities (including tailings deposition) took place at the Faro Mine site. The Vangorda deposit was depleted of economic reserves in 1998, the same year the mine ceased operations. Although the mining plan for the Grum Pit was only partially completed as of 1998, extraction of the residual ore is not considered to be economically viable.

The following provides brief description of the mine site components that are the subject of the proposed project. Full details of the Anvil Range Mine Complex can be found in Volume I of the Environmental Assessment Report. This is then followed by a summary of the proposed care and maintenance plan and related activities.

3.1 Faro Mine Site

The Faro Mine site is comprised of 14 primary structures (Appendix B – Figure 2):

1. Faro Main Pit
2. Faro Zone 2 Pit
3. Faro Rock Dumps
4. Rose Creek Tailings Impoundments
5. Cross Valley Pond and Dam
6. Mill and Other Buildings
7. Water Treatment Facilities
8. Faro Creek Diversion
9. Fresh Water Storage Dam and Reservoir
10. Pumphouse Pond and Dam
11. North Fork Rose Creek Diversion
12. North Wall Interceptor Ditch
13. Rose Creek Diversion Canal
14. Haul Road and Rock Drain

3.1.1 Faro Main Pit

The Faro Main Pit measures approximately 1675 m long by 975 m wide, with a surface area of approximately 1.06 km^2. Two access ramps enter the Faro Main Pit, one in the southeast and the other in the southwest walls.

The northeast wall of the Main Pit is progressively failing towards the Faro Creek Diversion. The stability of the slope face is not considered to be at risk of becoming compromised within the term of the license period (2008). Between 1992-1993 and 1995-1998, the Faro Pit was used for tailings deposition from the Grum and Vangorda deposits. Tailings were deposited from the southern end of the pit.

The Faro Main Pit was subject to increased water volumes from runoff, seepage inflows, and tailings inflows. In 1997, the water elevation had reached the desired maximum range as identified in Kilborn (1991) at approximately 15 metres below the lowest overflow elevation. Since 1998, a pump and treat system has been incorporated into a seasonal pumping program that maintains the in-pit water within desired ranges. Presently, the water quality in the Faro Main pit is non-compliant and is treated in the mill water treatment system.

3.1.2 Faro Zone 2 Pit

The Zone 2 Pit is adjacent to the Faro Main Pit. Prior to backfilling with overburden, the surface area of the Zone 2 Pit was 0.27 km^2 and was 100 m at its deepest point.

The maximum storage capacity available for water collecting in the pit has been estimated at 480,000 m^3. A pumping well is utilized to maintain the water elevation in the backfilled pit below the overflow elevation by pumping water to surface and into the Main Pit. After pumping and treatment, Main Pit water is discharged into Rose Creek.

3.1.3 Faro Rock Dumps

Between 1968 and 1988, 31 rock dumps were established in the Faro Mine Site, with the Faro Main and Intermediate Dumps being the largest at the site. The Faro Valley Dump is located in the original channel of Faro Creek. Estimated total area, volume and tonnage figures for the dumps at the Faro Mine Site are as follows:

- Total Area: 3,344,570 m^2
- Total Volume: 128,925,000 m^3
- Total Tonnage: 257,850,000 tonnes

3.1.3.1 Faro Northwest and Parking Lot Dumps

Located northwest of the Main Pit and north of the plant site area, the Faro Northwest Dumps were constructed primarily by end dumping. These dumps cover a total area of about 393,000 m^2, with an average height of 21 m, and an estimated tonnage of 15 million tonnes.

These dumps were historically used for the storage of used and spare equipment. All scrap steel, garbage, and buildings were removed in 1999-2000 so that the rock benches were left clear of mining debris.

Two other dumps located immediately to the north of the mill site and south of Northwest Dumps ("Lower Parking Lot Dump" and "Upper Parking Lot Dump", respectively) were constructed between 1975 and 1976, and contain approximately 2.9 million tonnes of rock, covering an area of about 0.1 km^2. Boneyards of scrap steel and other miscellaneous waste materials are present on the Parking Lot Dumps.

These dumps were constructed on a moderately sloping well-drained terrain, and have been stable since construction (approximately 30 years), with no signs of instability. Limited water flows from the dumps with no significant erosion from surface water flows.

3.1.3.2 Faro Valley Dump

The Faro Valley Dump is located north of the open pit in the original channel of Faro Creek, which was diverted around the pit to the northeast to minimize the flow of clean water into the pit during mining. The Faro Valley Dump has two sections: the larger Faro Valley North Dump (136,000 m^2), and the smaller Faro Valley South Dump (32,600 m^2), which together contain a combined total of 4.1 million tonnes of waste rock.

Stability of the southern slopes of this dump is dependent upon the stability of the north wall of Faro pit, which has slumped and is expected to continue to degrade with time. An upgradient head pond with a highly variable water level is created by the dump acting as a rock drain. Seepage from the Faro Valley Dump reports to the Faro Main Pit.

3.1.3.3 Faro Main and Intermediate Dumps

The Faro Main and Intermediate Dumps are the largest waste rock dumps, and were in use over an 18-year period. These dumps are located south and southwest of the open pit, covering a total area of approximately 1.1 km^2, with an estimated total tonnage of 145 million tonnes.

The outer slopes of these dumps have been stable since construction, with no signs of instability, and no significant upstream water source that could cause elevated pore pressures in the dumps. The stability of the dump face is inspected on an annual basis by a qualified geotechnical engineer.

A large portion of the groundwater flow from the Faro Main/Intermediate Rock dumps is thought to report to the surface ponds of the tailings facility with some reporting into the tailings.

3.1.3.4 Faro Northeast Dumps

The Faro Northeast Dumps, are comprised of the Outer Northeast Dump, Upper Northeast Dump, and the Lower Northeast Dump, which are located to the southeast of the main pit. The Upper and Lower Dumps (of which the western portions infill the Zone 2 pit) contain 38.3 million tonnes of waste rock, and cover an area of approximately 0.5 km^2. The Outer Northeast Dump contains about 0.2 million tonnes of rock, covering an area of 0.01 km^2.

The outer slopes of these dumps have been generally stable since construction, and no significant upstream water source exists that could cause elevated pore pressures in the dumps. Seepage from these dumps report to: the North Fork of Rose Creek via surface seeps and shallow subsurface flow, the Main Pit, and the Zone 2 Pit.

3.1.3.5 Near Pit Dumps

The Near Pit Dumps are considered to include the Ramp Zone Dump, Ranch Dump, and the Southwest Pit Wall Dump, which are located immediately to the south and southwest of the pit, and north of the Main and Intermediate Dumps. These dumps were constructed between 1989 and 1991, and are estimated to contain approximately 4.3 million tonnes of rock, covering an area of about 0.2 km^2.

The outer slopes of these dumps have been stable since construction, and no significant upstream water source exists that could cause elevated pore pressures in the dumps.

3.1.3.6 Low Grade Stockpiles

Six stockpiles of various types of low grade ore and high sulphide waste rock are located in small piles near the crusher and the Faro Main Pit. These are characterized as the following (with estimated tonnages):

1. Low Grade 'A' (0.8 million tonnes)
2. Low Grade 'C' (0.1 million tonnes)
3. Crusher Stockpile Base (tonnage unknown)
4. Mt. Mungley Dumps (1.1 million tonnes)
5. Oxide Fines Dumps (0.3 million tonnes)
6. Fuel Tank Dumps (2.6 million tonnes)

All of these Low Grade Stockpiles dumps are small relative to the other rock dumps, internal to the area encompassed by the major rock dumps, and generally located on flat ground with the physical stability of these piles not being a substantial concern.

3.1.3.7 Haul Road, Haul Road Dumps, and Rock Drain

The North Fork Rock Drain, built between 1986-1988, forms part of the haul road between Faro and the Vangorda Plateau Mine sites. No substantial stability problems have affected the haul road since construction.

The two Haul Road Dumps (East and West) were built in 1983 and 1989 respectively. The Outer Haul Road East dump is located between the Intermediate dump and the North Fork Rock Drain. The Outer Haul Road West dump forms the haul road around the south of the Intermediate and Main Dumps. The Haul Road Dumps are estimated to contain 17.0 million tonnes of waste rock and cover an area of 0.3 km^2.

The rock drain was formed by end dumping coarse durable mine rock from the top of the haul road embankment. The performance of the rock drain is considered to be acceptable, however the long-term physical stability of the rock drain will depend upon the maintaining permeability in the drain.

3.1.4 Rose Creek Tailings Facility

Mill tailings were deposited in three separate surface impoundments; the Original Impoundment (1969-1975), Second Impoundment (1975-1982 plus 5 months in 1986), and the Intermediate Impoundment (1986-1992). From 1992 to 1998, tailings were deposited in the Faro Pit. The surface impoundments contain an estimated total of 54.4 million tonnes of tailings with an estimated volume of 28.6 millions m^3.

The Rose Creek Tailings Facility contains tailings with demonstrated strong acid generating potential. Oxidation of the exposed tailings during the mine life has resulted in a significant amount of soluble oxidation products including sulphates, soluble metal salts and acidity. Environment Canada estimates that approximately 35,000 tonnes of soluble zinc are retained in the tailings (V. Enns, Environment Canada, pers comm.).

3.1.4.1 Original Tailings Impoundment

The Original Impoundment is located on the north side of Rose Creek at the mouth of the old Faro Creek channel, and covers an area of approximately 42 ha. This impoundment was in operation between 1969 and 1975. In 1975 a breach occurred releasing an estimated 247,000 m^3 of slurry, containing approximately 12,300 m^3 of tailings solids between the impoundment and the mouth of Rose Creek. The Original Tailings Impoundment is estimated to contain 6,300,000 m^3 of tailings.

3.1.4.2 Second Tailings Impoundment

Completed in 1975 after the breach in the original tailings impoundment, the Second Tailings Impoundment consists of a west and an east dam, with height measurements of approximately 27 m and 4.3 m, respectively. The Second Tailings Impoundment was in

operation between 1975 and 1982, with an additional 5 months of use in 1986. The Second Tailings Impoundment is estimated to contain 10,400,000 m^3 of tailings.

3.1.4.3 Intermediate Tailings Impoundment

The Intermediate Dam was initially constructed in 1981, and was raised in 1988, 1989, and 1991 to a maximum vertical height of approximately 34.4 m. The dam was built downstream of the Second Impoundment, and contains non-compliant water and tailings solids. Water is passed by siphons or spillway overflow from the Intermediate Pond into a polishing pond that is formed by the Cross Valley Dam. The Intermediate Tailings Impoundment is estimated to contain 11,900,000 m^3 of tailings.

Although some cracking has occurred on the crest of the Intermediate Dam, overall it seems to be performing in a satisfactory manner. Some visual seepage has been observed at the toe of the dam, at its south abutment, just above the water level of the Cross Valley Pond. There may be additional seepage occurring below the water level of the pond.

3.1.4.4 Cross Valley Pond and Dam

Constructed in 1981, the Cross Valley Pond is located approximately 500 m downstream of the Intermediate Dam. The Cross Valley Dam has a maximum vertical height of 19 m, constructed with a low-permeability earthfill core and an upstream blanket of glacial till.

The Cross Valley Dam creates a polishing pond for water discharged from the Intermediate Impoundment prior to release into Rose Creek. The polishing pond contains lime treatment sediments but does not hold tailings. Water is released as required through siphon pipes or spillway overflow into Rose Creek.

3.1.5 Mill, Buildings and Other Infrastructure

The Faro Mill was designed to produce lead and zinc concentrates with an initial capacity of 5,000 tonnes of ore per day in 1969, which was eventually increased to a maximum of 13,500 tonnes per day in 1986. The facilities located at the Faro mill site include:

1. Primary crusher and coarse ore storage;
2. Mill and concentrate loadout;
3. Offices and warehouses;
4. Heavy duty equipment repair shops;
5. Guardhouse and administration building; and
6. Tire shop and light vehicle repair shops.

Other buildings not located directly at the mill site include a lube station and core shacks, the copper sulphate plant, the bulk explosives plant, and the pump house.

A landfill is located on the Main/Intermediate Rock Dump that was initiated and largely developed during past mining activities. Since 1998, a small incremental volume of

waste has been deposited into the landfill. The specific contents of the landfill are unknown and no inventory or operating procedures related to past use of the landfill are available. A fire started in the landfill in January 1997. Attempts during 1997 to manually extinguish the fire were unsuccessful as the source of the fire migrated underground. There is currently no active burning. During the Interim Receivership the waste dumping location has been a higher area away from the landfill.

3.1.6 Water Treatment Facilities

3.1.6.1 General

Water treatment at the Rose Creek Tailings Facility began in 1992 due to a general increase in zinc concentrations within the tailings containment area. Treatment ensured that surface outflow met maximum allowable discharge limits, and was accomplished through various methods of pH modification and settlement.

The Faro Pit pumping system was installed in 1997 to provide processing water to the mill during operations. This system has been used exclusively since the mine shut down in 1998 to pump water from the Faro Main Pit for treatment to maintain the in-pit water level within the pre-determined range. From 1998 to 2000, water pumped from the Main Pit was limed in a spill box and directed to the Intermediate Pond and ultimately to the Intermediate Dam Spillway for further treatment.

3.1.6.2 Faro Mill Water Treatment System

The mill was converted for use as a water treatment system in 2001. The new system provides efficient treatment of water pumped from the Faro Main Pit such that the effluent can be released to the Polishing Pond or to Rose Creek. The new water treatment system primarily uses components of pre-existing equipment. It utilizes agitated flotation cells for lime conditioning and clarifier tanks for settling of treatment sediments.

3.1.6.3 Intermediate Dam Spillway Treatment System (portable)

Non-compliant water in the Intermediate Pond is treated in a "portable" treatment system located in the spillway. This system consists of an inlet syphon, a lime mixing system, steel treatment tank, and the Cross Valley Pond (which provides for settlement of treated sediments).

3.1.7 Dams and Diversions

3.1.7.1 Faro Creek Diversion

Prior to mine development, Faro Creek passed through what is now the center of the Faro Main Pit, past the mill site, and joined Rose Creek at what is now the toe of the Original Tailings Embankment. The Faro Creek Diversion Channel diverts water around the northeast side of the Main Pit and into the North Fork of Rose Creek. The total length of

the diversion is 3,350 m. The diversion is known to leak water into the Main Pit along the northeastern wall of the pit.

3.1.7.2 Faro Valley Interceptor Ditch

The Faro Valley Interceptor Ditch was constructed to intercept runoff from the hillsides north and northwest of the Faro Valley Rock Dump, to be directed into the Faro Creek Diversion. The ditch consists of a small excavation into surficial soils which is currently conveying a small amount of water compared to its available capacity. Recent maintenance has improved the performance of this ditch.

3.1.7.3 Fresh Water Supply Dam and Reservoir

The Fresh Water Supply Dam (FWSD) and Reservoir are original mine structures that provided water for ore processing. The Reservoir was used to store water for ore processing through the winter season. These structures became redundant after the installation of the recycle pumping system from the Main Pit in 1997. Under a separate project, the Proponent is planning to remove the FWSD by excavating a channel through the dam to the original ground. The project to breach the dam has already undergone a separate environmental assessment/regulatory process. The proposed breach is planned to be completed by March 2004.

3.1.7.4 Pumphouse Pond Dam

The Pumphouse Pond Dam, constructed in 1969, was built in the Rose Creek channel downstream of the confluence of the North and South Fork of Rose Creek. The pumphouse supplied water from the pond to the mill through a 2 km steel pipe. The dam was rebuilt in 1974, after construction of the Second Tailings Impoundment.

3.1.7.5 North Fork Rose Creek Diversion

The North Fork Rose Creek Diversion, downstream of the mine access road crossing, consists of a primary and secondary channel. The primary channel allows surface water to recharge the groundwater system through a series of ponds, by permeating sand and gravel surface soils. The secondary channel passes high flow water around the groundwater recharge ponds and into the South Fork of Rose Creek, immediately downstream of the pumphouse pond.

3.1.7.6 North Wall Interceptor Ditch

The North Wall Interceptor Ditch intercepts clean runoff from the north side of the Rose Creek Valley and diverts it around the north abutment of the Cross Valley Dam.

The ditch was not lined with erosion protection measures. Erosion and sedimentation have caused partial blocking of the ditch at times, however despite this, the ditch is considered to perform reasonably well. Periodic maintenance and repairs have been

completed on the ditch including upgrading of the containment berm on the downstream side of the ditch, upgrading of the containment berm below the borrow area to prevent potential seepage from occurring, and ice removal and monitoring of the two culverts near the Cross Valley Pond.

3.1.7.7 Rose Creek Diversion Canal

This diversion canal diverts Rose Creek water around the tailings impoundments. Water from both the South and North Forks of Rose Creek enters the upper section of the Rose Creek Diversion Channel. One primary tributary enters the upper section of the canal from the south side, downstream of the pumphouse pond. Another tributary enters the lower section of the canal from the south side near the downstream end.

The canal is prone to ice buildup over the winter, and clearing of ice has been required on occasion. For the purpose of maintaining fisheries habitat, the water license requires the provision of a minimum flow through the winter. This provision was in place to ensure that during milling operations when water from the South Fork of Rose Creek was being used for milling (through the Fresh Water Storage Dam (FWSD)) sufficient base flow was provided. This is not longer the case and the creek will return to its natural flow regime after the proposed breach of the FWSD.

3.2 Vangorda Plateau Site

Facilities associated with the Vangorda Plateau Mine Site include the following (Appendix B – Figure 3):

1. Open Pits;
2. Rock Dumps;
3. Dams and Diversions;
4. Water Treatment Facilities;
5. Settlement Ponds;
6. Buildings and Infrastructure;

3.2.1 Open Pits

3.2.1.1 Vangorda Pit

Vangorda Pit, located at the east end of the Vangorda Haul Road, has a width of 200-350 metres, is 1.15 km in length, and is 150 m at the deepest point. Water enters the pit through runoff, precipitation, groundwater inflows, and water pumped or siphoned into the pit from external sources. The in-pit water level rose to the maximum desired elevation in early 2002, at which point, a seasonal water pumping and treatment program commenced.

The Vangorda Pit walls have experienced local instability. The northwest end of the pit, which is carbonaceous phyllites and is near several faults, has experienced wall failures that were related to a pit expansion that required the Vangorda Creek Diversion channel to be moved soon after construction. A recent assessment of the physical stability of the northwest wall concluded that it is unlikely that a large scale failure of the pit wall below the flume will affect its performance for a timeframe in excess of 50 years. However, there are several areas along the bench face overlooking the flume that pose a risk due to localized failures that could damage the flume. The northeast walls of the pit are more stable.

Acid rock drainage is occurring on the pit walls. Uncontaminated water is diverted around the pit, however no other in-pit mitigative measures have been implemented to date. Residual ore remains in the southern end of the pit, and has been demonstrated as a source of contaminants entering the pit pond.

3.2.1.2 Grum Pit

The Grum Pit is located approximately 2 km northwest of the Vangorda Pit. Mining in the Grum Pit intersected old underground exploration workings such that the water level in the pit now controls the water elevation in the underground workings. A well-developed slope failure has occurred on the northeast till wall (Phase 1). Water flow at the base of the till is thought to be the cause of the instability.

Surface water is diverted around the pit via the Grum Interceptor Ditch. In-pit water level is monitored and has increased slowly relative to that of the Vangorda Pit due to the large storage volume and low inflow volumes.

3.2.2 Rock Dumps

3.2.2.1 Vangorda Rock Dump

Located directly southwest of the Vangorda Pit, the Vangorda Rock Dump was constructed from 1990-1998 and contains glacial till overburden and waste rock excavated from the Vangorda Pit. The waste rock has been classified as either "sulphide" or "phyllite", both of which are considered potentially acid generating. The Vangorda Main Dump contains approximately 16 million tonnes of rock.

Because of the higher potential for acid generation, sulphides were segregated into a cell. Approximately 225,000 tonnes of 'oxidixed fines' occupies an area of the suphide cell where some of the material is exposed to the surface. This material has been shown to generate and release substantial concentrations of contaminants. Seepage from the Vangorda Rock Dump is collected into the Little Creek Dam storage pond and pumped on an as-required basis to the Vangorda Pit for treatment.

Rehabilitation of the dump seepage collection system, test re-sloping and capping, and groundwater quality monitoring was instituted in 1993/1994.

3.2.2.2 Grum Dumps

The Grum Waste Dumps are comprised of the Overburden Dump, Southwest Rock Dump, and the Main Rock Dump. The Overburden Dump contains approximately 24 million tonnes of glacial till, built in five 15 m lifts with setbacks resulting in gentle slopes.

The Southwest Rock Dump contains 20 million m^3 of mainly calcareous phyllite. This dump drains primarily to the south towards the main stem of Vangorda Creek, with the western edge extending into the drainage of the West Fork of Vangorda Creek.

The Main Rock Dump consists of seven 30 metre-high lifts and includes a sulphide cell. Sulphides were dumped on a minimum base of 10 m of a phyllite to isolate the sulphides from the original ground surface and to provide buffering capacity for seepage through the sulphide cell. The ultimate size of the Grum Main Dump was designed to hold 108 million tones of rock.

3.2.2.3 Ore Transfer Pad

Located at the north end of Grum Pit, the Ore Transfer Pad was used as a temporary stockpiling location. Although economic volumes of ore were removed during operations, residual quantities of ore are thought to be present on the pad.

3.2.2.4 Haul Road

The Vangorda Plateau Haul Road, completed in 1989, was developed as a heavy haul road for hauling ore from the Ore Transfer Pad to the Faro mill, a distance of 13 km. The road extends a further 3 km from the transfer pad along the south side of the Grum Pit, to the pit entrance on the south side of the Vangorda Pit.

The road surface is up to 30 m wide and has a 2 m high safety berm on either side of the road. The road crosses several major streams including the North and South Forks of Rose Creek as well as the West Fork and main stem of Vangorda Creek. Crossings were constructed using corrugated metal pipes and overflow culverts except for the crossings at the North Fork Rose Creek and Reservoir Creek which were constructed using rock drains. The crossings were not designed to allow for fish passage.

3.2.3 Buildings and Infrastructure

The following facilities are located at the Grum and Vangorda mine sites:

1. Grum Office/ dry complex;
2. Grum shop building;
3. Water Treatment Plant;
4. Grum exploration portal buildings;

5. Old exploration camp;
6. Grum ore haul contractors office and shop;
7. Expolsives magazine;
8. Grum lube/fuel building;
9. Grum ore storage pad.

3.2.4 Water Treatment Facilities

Constructed in 1989/1990, the Grum/Vangorda Water Treatment Plant was used to treat water from the Grum Pit, Vangorda Pit, and Little Creek Dam between 1990-1993 and 1995-1998. The water treatment plant was reactivated and successfully operated in 2002 when the water level in the Vangorda Pit reached the determined maximum desired elevation. The plant is scheduled for annual or bi-annual seasonal operation in order to maintain the water level in the Vangorda Pit within the desired range.

3.2.5 Settlement Ponds

3.2.5.1 Moose Pond

Moose Pond is a natural depression on the northwest side of Vangorda Creek that was prepared for use as a settling pond for Grum Creek water in 1995. No accumulation has been observed in the pond due to exfiltration.

3.2.5.2 Clarification Pond

The Clarification Pond acts as a settlement pond for effluent exiting the Water Treatment Plant. The pond embankment exhibits cracking and surficial slumping in some locations. The embankment has been treated with geomembrane and rip rap rock in response to observed seepage.

3.2.5.3 Sheep Pad Ponds

The Sheep Pad ponds were constructed in 1995 to mitigate suspended sediments entering Vangorda Creek. Initial settling occurs in the coarse settlement pond. Water then flows to the second pond via a 15 m flume. In the past, flocculants have been added to the flume, and water has been siphoned into Vangorda Pit during freshet to reduce the risk of a discharge of non-compliant water.

3.2.6 Dams and Diversions

3.2.6.1 Little Creek Dam

Located immediately northwest of the Vangorda Rock Dump, the Little Creek facility was constructed in 1990 and collects seepage from the Vangorda Rock Dump. This water is periodically pumped to the Vangorda Pit for treatment. The facility consists of Little Creek Dam, an earth embankment, and a storage pond.

3.2.6.2 Vangorda Creek Headworks Dam

This dam is constructed around an existing stream crossing on the Blind Creek Road. The dam shows no sign of settlement or cracking of the headworks embankment nor any evidence of instability or surficial movement of either the upstream or downstream faces.

3.2.6.3 Grum Interceptor Ditch

With a length of approximately 2,500 m, the Grum Interceptor Ditch collects surface runoff in the upper reaches above the Water Treatment Plant. The ditch receives effluent from the Water Treatment Plant clarification pond and passes this combined flow around the west and south perimeter of the Grum overburden Dump where water passes into the Sheep Pad Ponds.

3.2.6.4 Vangorda Creek Diversion

The Vangorda Creek Diversion is a 1000 m long diversion around the perimeter of the Vangorda Pit. The diversion is an open channel lined with half culvert. Flow discharges into a plunge pool which then enters a culvert that feeds a vertical drop box structure. Sections of the half culvert diversion suffered major structural damage due to rock falls (1999 and 2002) and a soil slide (2002) that required portions of the flume to be replaced. During the summer of 2003 another rock slide damaged portions of the flume that require replacement.

3.2.6.5 Vangorda Rock Dump Seepage Collection Ditch

The Vangorda Rock Dump Seepage Collection Ditch, constructed in 1994, collects seepage and runoff from the dump, and passes this water into Little Creek Pond.

3.2.6.6 Vangorda Pit Diversion Ditches

Surface runoff is diverted around the Vangorda Pit via the Vangorda Diversion Ditches. The northeast ditch passes water into Shrimp Creek, which then flow into the Main Fork of Vangorda Creek. The northwest ditch diverts water into a settlement/groundwater recharge basin with overflow entering the plunge pool above the haul road. The northeast diversion ditch was rehabilitated in 2002 to repair a breach, and to increase flow capacity to Dixon Creek.

3.3 Proposed Care and Maintenance Activities

Deloitte & Touche Inc., the Interim Receiver (IR), states that the fundamental objective of the proposed care and maintenance plan is to "provide short-term mitigation of environmental effects by ensuring that the terms and conditions of the water licence are achieved". A risk-based approach has been used to plan the care and maintenance activities. As well, the IR stated that "activities are also chosen to prevent, to the extent

possible, an increase in long-term liabilities at the site and to not constrain long-term closure planning". Using this approach, the IR has identified water management as the highest priority and the most immediate issue. As a result, water management is the priority of the activities proposed for the licence renewal period with a focus on water treatment and maximization of storage capacity for non-compliant water and unforeseen events. The proposed activities are a direct continuation of the activities that have been performed by the IR at the site since 1998.

The proponent acknowledges that many of the existing mine facilities have had, or are having, an impact on the environment. The proponent states that it is the goal of the proposed care and maintenance plan to provide for the continuation of short-term mitigation of the impact that the existing mine facilities have on the environment. Long-term mitigation will be accomplished through the implementation of the Final Closure and Reclamation Plan (FCRP). Within the term of the proposed licence progressive degradation or catastrophic failure of some of the existing facilities is possible. Therefore, the proponent proposes that the care and maintenance plan provide for monitoring of these facilities and a framework for responding to unforeseen events. The proposed Adaptive Management Plan (AMP) provides this framework

The proponent outlined the following, specific objectives of the Care and Maintenance Plan in section 5.1, Volume II, of the EAR:

1. To minimize the quantity of clean water that enters or crosses the site and subsequently requires treatment;
2. To maximize the capture of water that requires treatment;
3. To provide storage and treatment for water that requires treatment;
4. To assess the efficiencies of the above systems on an ongoing basis and to implement upgrades and maintenance as appropriate;
5. To monitor, on an ongoing basis, environmental conditions of the mine site and in the receiving environment and the physical stability of earth structures;
6. To interpret and utilize monitoring information on an ongoing basis to improve the water management systems;
7. To provide for efficient management of all activities providing for worker health and safety, public health and safety, contingency and emergency preparedness planning and cost effective management of public funding; and
8. To report on care and maintenance activities on a scheduled basis as per the water licence.

The proponent plans to achieve these objectives through the following management systems and physical activities:

1. Continue to utilize the Faro Main Pit as a storage location for water that requires treatment and treat this water on a seasonal basis in the mill water treatment system, while maintaining the existing Faro Creek Diversion;
2. Continue to utilize the Intermediate Pond as a storage location for water from the plant site and Rose Creek Tailings Facility area that requires treatment and treat

this water on a seasonal basis in the Intermediate Dam outflow spillway, while maintaining the existing Rose Creek Diversion;

3. Continue to utilize the Vangorda Pit as a storage location for water that requires treatment and treat this water on a seasonal basis in the existing Water Treatment Plant, while maintaining the existing Vangorda Creek Diversion;
4. Continue environmental and physical stability monitoring programs according to the site monitoring protocols and the requirements of the water licence; and
5. Continue to provide dedicated on-site management that employs high standards for worker and public health and safety.

The proponent provided a detailed summary of the proposed care and maintenance plan, the majority of which is a continuation of the activities that have been carried out since 1998. A summary of these activities was provided with the EAR and can be found in Appendix A and is illustrated in Figure 4 of Appendix B. The reader is referred to the EAR for full details of the proposed care and maintenance activities.

3.4 Proposed New Activities

The following proposed new activities have been designed and would be implemented according to the following general guidelines:

1. Mitigate short-term environmental, health and safety risks;
2. Complement, or avoid conflict with, possible future closure and reclamation;
3. Maximize the local training and employment benefits to the Town of Faro and the community of Ross River; and
4. Conform to all applicable Acts, Regulations and Best Management Practices.

3.4.1 Building Demolition and Disposal

3.4.1.1 Demolition

A detailed demolition plan will be prepared to provide appropriate environmental control for building demolition, and will include the following components:

- Work Plan;
- Worker Health and Safety Protocol;
- Environmental Monitoring and Mitigation Plan;
- Hazardous and Regulated Materials Identification and Management Protocol;
- Salvage and Recycle Materials Identification and Management Plan; and
- Cost comparison of off-site transport of demolition waste versus on-site disposal.

3.4.1.2 On-Site Demolition Waste Landfill

The current landfill is not considered appropriate for the landfilling of demolition debris generated from the demolition of major buildings. A conceptual plan determined that a new landfill will require a total volume of approximately 212,000 m^3. Three sites were assessed, and it was determined that the preferred site is located adjacent to a large waste rock pile located northeast of the Faro mill.

Waste material will be cut to suitable dimensions to reduce the volume of waste in the landfill. A final cover will be placed on top of the waste and likely consist of 1 m of compacted soil, which will form a low permeability barrier that will limit the amount of surface water infiltration through the cover to the waste.

Surface water control ditches will be excavated to intercept surface water flowing towards the covered waste.

An inventory of the existing infrastructure and waste materials at the Faro and Vangorda mine sites was completed to provide a conceptual order of magnitude estimate of the total waste volume and to determine the required size of landfill.

The total estimated, conceptual waste volume to be landfilled from both Faro and Vangorda sites is 135,000 m^3. The total volume required for the landfill must also make

provision for intermediate soil cover and a final soil cover. Assuming a waste-to-soil ratio of 3:1, the total volume required for waste and intermediate cover soil would be 180,000 m^3. With a final cover of an assumed 1.15 m thickness, the required airspace volume would be about 32,000 m^3 with an area of 28,000 m^2. Therefore, the landfill is estimated to require a total volume of approximately 212,000 m^3.

3.4.2 Remediation of Hydrocarbon Contaminated Soil

A preliminary investigation of hydrocarbon contaminated soils will be undertaken to provide an estimate of soil volumes and types of hydrocarbons present. This may involve test pit sampling in areas of potential concern and analysis of samples for the various parameters of concern. As part of the EAR, the proponent identified 14 areas of suspected soil contamination and the potential contaminants. The intent is to identify and characterize hydrocarbon contamination in areas that are clearly above standard remedial guidelines and benchmarks. The proposed investigation is not a "Phase II Environmental Site Assessment" but an investigation of areas of high concentrations of hydrocarbon contamination. This information will be used to initiate final design and construction of the proposed on site bioremediation cells. Preliminary estimates by the proponent are that there is 15,000 m^3 to 25,000 m^3 of subsurface soil contamination at the site.

The proponent provided, as part of the EAR, a conceptual design of the proposed bioremediation cell. It is proposed that the cells would be located within previously disturbed rock dump areas, and therefore no new ground disturbance is required. Given the distance between the two sites, two smaller treatment facilities will be built, one at each mine site. The preferred location for the facility at the Faro mine site is close to the present tank farm located north of the Faro lube shack. An alternate location is located on top of the Main Rock Dump. The preferred location for the facility at the Vangorda Plateau mine site is near the present lube shack and tank farm.

Each facility would consist of individual biocells approximately 12 m wide by 100 m long. Each would contain soil to a maximum height of 2 m, with a volume of 2,000 m^3. Each biotreatment cell will be bermed (1 metre high) and lined to prevent the infiltration of leachate into the ground. Each cell will be constructed with a sand base layer overlain by a 0.75 mm (30 mil) thick "Arctic Liner" geomembrane. An upper layer of sand or protective geotextile would then be placed above the base line, if require, for leachate collection. Leachate drainage pipes will be laid on top of the liner followed by a layer of gravel roughly 15 cm thick.

Prior to construction of the biotreatment facilities, tests will be carried out to characterize the contamination and determine the appropriate nutrient loading rate. This will also include:

- chemical testing of the soils;
- determination of soil characteristics such as moisture content, grain size;
- ambient air temperature; and
- a possible pilot study.

Leachate will be collected in a sump located in the lowest corner of each cell and redistributed to the top of the soils to maintain moisture conditions. Nutrients will be added to the circulated leachate to maintain the appropriate balance. Any excess leachate will be stored in a holding tank until it can be added back onto the soils or until an appropriate disposal method is implemented. Each cell will be covered with a reinforced polyethylene tarpaulin or clear polyethylene sheeting to prevent any infiltration of onset precipitation. To enhance the bioremediation process, the soils may be inoculated with microbes. The bacteria and/or nutrients utilized in the bioremediation process will be cross-referenced for compliance with the *Canadian Environmental Protection Act* (CEPA).

The contaminated soils in the cells will be turned twice annually to aerate the soil; end of spring and in the fall. To provide for more efficient remediation, the cells may also be mixed mid-summer. The soil in the cells will be analyzed annually, typically after the fall turning to determine hydrocarbon content and microbial population viability.

3.4.3 Maintenance of Acid Generating Materials

The Proponent has proposed interim reclamation measures to address relatively small quantities of highly acid generating material that are known to be highly reactive, and releasing acidic water and contaminants. These include:

- discrete piles of oxide fines near the crusher stockpile, and
- piles of oxide fines on the Vangorda waste rock dump.

For the piles located near the crusher stockpile area, the plan is to consolidate the piles in the crusher stockpile area and to cover with 1.0 m compacted clay or silt to mitigate the release of acidity and contaminants in the short term. At the Vangorda Rock Dump, it is proposed to leave this pile in place and cover with a 1.0 m cover of compacted clay.

For this proposed activity, the proponent has acknowledged that other options for interim reclamation of these piles may be brought forward prior to the proposed work being undertaken and any such options will be considered for implementation. As well, the selection of the preferred alternative will be done in such a way as to complement the work of the Type II Mines Project Office.

3.5 Adaptive Management Plan

The proposed care and maintenance plan includes an Adaptive Management Program (AMP) that provides a framework for responding to unforeseen events related to the continued degradation of the structures at the mine site, including the Faro rock dumps, Rose Creek Tailings Facility, Grum rock dump and Grum pit. The proposed AMP consists of monitoring requirements, triggers and either proposed actions or planning/consultation mechanisms for determining actions. The objective of the proposed AMP is to provide protection from unforeseen events until the scheduled implementation of the Final Closure and Reclamation Plan.

The proposed AMP envisions an event, defines a response trigger and describes the general responses as well as an approach to determining appropriate responses that could be implemented. A summary of the proposed elements of the AMP are provided in the Table 3.1. Full details of the proposed AMP can be found in the revised Section 7 of the EAR.

Table 3.1 Summary of Proposed Adaptive Management Program

AMP Event	Trigger	Possible Consequences	Response	Monitoring and Management Review
Degraded water quality in the N. Fork of Rose Creek	Contaminant Concentrations in the N. Fork of Rose Creek display a sustained and statistically significant increase over the 1998 to 2002 baseline.	Exposure of aquatic, terrestrial and human resource users to increased levels of contaminants in the N. Fork, Rose Creek Diversion and possible further downstream in Rose Creek, Anvil Creek and the Pelly River.	Staged Response. Initial response will be increased monitoring (frequency and type) to identify source of contamination. Then implementation of short term mitigation, depending on source of contamination, while longer term mitigation is developed, permitted and implemented.	Both surface and groundwater monitoring is required. Site water monitoring protocol provides for routine collection of this information and is considered by the proponent to be adequate. Review of data will be initially monthly and subsequently annually in annual environmental report.
Degraded groundwater quality in Rose Creek Valley Aquifer.	Contaminant concentrations in the aquifer display a statistically significant increase in the downgradient direction over the 1998 to 2002 baseline.	Exposure of aquatic, terrestrial and human resource users to increase levels of contaminants in Rose Creek, Anvil Creek and the Pelly River.	Staged Response. Initial response will be increased monitoring intensity verify groundwater contamination levels. Water balance projection to provide for prediction of timeframe for contamination and prediction of effects in Rose Creek. Development, permitting and implementation of response plan to mitigate adverse effects predicted by water balance projection.	Groundwater monitoring is required of the Rose Creek Valley Aquifer. Site water monitoring protocol provides for semi-annual (spring and fall) collection of this information and is considered by the proponent to be adequate. Review of data will be initially monthly and subsequently annually in annual environmental report.
Degraded water quality in Rose Creek downstream of the mine facilities.	Contaminant Concentrations in Rose Creek downstream of the mine facilities display a sustained and statistically significant increase over the 1998 to 2002 baseline.	Exposure of aquatic resources, terrestrial resources and human resource users to increased levels of contaminants in the Creek.	Staged Response. Initial response will be increased monitoring (frequency and type) to identify source of contamination. Then implementation of short term mitigation, depending on source of contamination, while longer term mitigation is developed, permitted and implemented.	Surface water monitoring is required. The locations required are several locations in Rose Creek downstream of the mine facilities. Site water monitoring protocol provides for routine collection of this information monthly and semi-annually and is considered by the proponent to be adequate. Review of data will be initially monthly and subsequently annually in annual environmental report.

Degraded Seepage Quality from the Grum Rock Dump	Contaminant concentrations in seepage from the Grum rock dump display a sustained and statistically significant increase over the 1998 to 2002 baseline.	Exposure of aquatic resources, terrestrial resources, and human resource users to increased levels of contaminants in Vangorda Creek and the Pelly River.	Staged Response. Initial response will be increased monitoring (frequency and type) to identify source of contamination. Then implementation of short term mitigation, depending on source of contamination, while longer term mitigation is developed, permitted and implemented.	Both surface and groundwater monitoring is required. The locations required are several locations along the toe of the Grum rock dump and Vangorda Creek. Site water monitoring protocol provides for routine collection of this information (quarterly, semi-annually or annually) and is considered by the proponent to be adequate. Review of data will be initially monthly and subsequently annually in annual environmental report.
Water level in Grum Pit reaches maximum desired elevation	The water elevation in the Grum Pit reaches the maximum desired operating range.	An uncontrolled release of non-compliant water to the receiving environment in Vangorda Creek. This could result in exposure of aquatic resources, terrestrial resources, and human resource users to increased levels of contaminants in Vangorda Creek and the Pelly River.	Staged Response. Initial response to implement the action plan recommended in the 2004 study report.	The type of monitoring information required is water elevation and water quality in the Grum Pit. Site water monitoring protocol provides for routine collection of this information and is considered by the proponent to be adequate. Review of data will be initially monthly and subsequently annually in annual environmental report.
Disruption of Fannin Sheep Migration through the mine site	An observed disruption or irregularity in the migration of Fannin sheep through the mine site.	A disruption in the migration pattern through the mine site could affect the health of the heard or could be the result of an unidentified effect on the herd.	Report observed irregularity to Department of Environment, Yukon Government.	The type of monitoring information required is observations of the sheep migration through the mine site. The proponent states that mine personnel routinely observe the sheep passing through the site.

Wind dispersed tailings result in adverse effects in terrestrial environment	Mitigation measures to be developed and implemented by 2005, based on the results of the 2002 and follow up studies of environmental contaminants in the terrestrial environment	Increased adverse effects on wildlife and human resource users. There could also be potential effects on socio-economic use, traditional/cultural use and human health.	Staged response based on results of 2002 study and follow up studies.	The type of monitoring information required is contaminant concentrations in vegetation, soils and wildlife, health and diversity of the vegetation community, health and diversity of the wildlife community and traditional knowledge. The proposed studies for follow up work in this area provides for the routine collections of this information by 2005. A review and interpretation of this information will be completed by 2005.

3.6 Proposed Changes to the Water Licences

Presently there are two water licences for the site: QZ95-003 for the Faro Mine site and IN89-002 for the Vangorda Plateau. Both licences were issued when active mining was underway and many of the terms and conditions reflect mine operations. Given the realization that the mine will not return to production and the nature of the proposed activities during the term of the licence renewal, some modifications are being proposed to the terms and conditions of the water licences. The following summarizes the four major topic areas for which changes are proposed. Further details can be found in Section 9, Volume I, of the EAR.

- Consolidation of the two existing "mining" licences into one "care and maintenance" water licence. The rationale for this single licence are:
  - Streamline the review and regulatory process for licence renewal;
  - Maximize coordination of management and operation of water treatment facilities; and,
  - Operational aspects of the two licences are no longer applicable.
- Adoption of Adaptive Management Plan in place of reference to various contingency plans developed for past operating conditions.
- Adoption of site water monitoring protocols in place of the existing schedules for "normal operations" and "temporary closure".
- "Held in Abeyance" licence terms and conditions that are specifically related to closure planning or mine abandonment. This includes clauses that require the licencee to implement closures according to timeframes not consistent with that of the Final Closure and Reclamation Plan (FCRP). This does not include the closure design criteria. These clauses will be included in the new licence.

3.7 Proposed Care and Maintenance Studies

Four care and maintenance studies are proposed that are designed to investigate environmental issues that relate to the short-term mitigation of environmental effects. The following is a brief summary of the proposed studies as outlined in Section 10, Volume I, of the EAR.

1. Assessment of Terrestrial Effects Related to the Faro Mine Complex – This is a follow-up study to the 2002 Metals In Vegetation study to determine if any short-term mitigation is required. The 2002 study indicated that metals in some samples of soil vegetation are present at concentrations above local reference sample locations. A multi-year study is proposed for continued investigation of the terrestrial environment with anticipated completion in 2005.
2. Grum Pit Management Study – The water elevation in the Grum Pit has increased progressively and may reach an action level during the proposed term of the licence renewal. The proposed study will project the rate of filling and determine an appropriate short-term (10 years) management plan. This study is proposed to be completed in 2003.

3. Treatment Sediment Management Plan – A sludge (treatment sediment) management plan is required for the duration of the care and maintenance activities to ensure that sludge is managed in an appropriate manner.
4. Investigation of Tailings Outside of the Rose Creek Tailings Facility – A study is proposed to determine if the uncontained tailings require short-term mitigation. These areas include the emergency tailings spill area, 1970's spill area, tailings near the copper sulfate plant and the bulk explosives plant, and the northside of the upper half of the Rose Creek Diversion Canal.

4.0 PROJECT ALTERNATIVES

This section identifies the RA's decision, as to its discretion, to consider alternative means and alternatives to the Project in this environmental assessment

4.1 Alternative Means of Carrying out the Project

For 'screening' type assessments under EAA, Section 12(1)(e), the RA has discretion whether to consider Alternative Means of Carrying out the Project in the scope of the assessment. It is the RA's decision not to consider this factor in this assessment.

4.2 Alternatives to the Project

For 'screening' type assessments under EAA, Section 11(1)(a), the RA has discretion whether to consider Alternatives to the Project in the scope of the assessment. It is the RA's decision not to consider this factor in this assessment.

5.0 SCOPE OF THE ASSESSMENT

Pursuant to section 11(1) of the Environmental Assessment Act (Yukon), the Responsible Authorities for a given project are required to determine the scope of the project being assessed. This is carried out through the identification of project components and associated extents (temporal and spatial) that will form the basis of the environmental assessment.

Two key components of scoping include "scope of the project", and "scope of the assessment". The "scope of the project" identifies the development activities and the "scope of the assessment" identifies environmental components in the screening.

5.1 Scope of the Project

The scope of the project for this assessment includes the physical works and undertakings in relation to the care and maintenance and related activities of the Anvil Range Mining Complex during the period of the proposed five (5) year water licence. This includes the principal undertaking and any accessory activities or physical works that are directly linked to, or interconnected with, the principal project. In this case the physical work is the actual mine site and the principal undertaking in relation to that physical work is the care and maintenance, new activities/undertakings, adaptive management program, ongoing studies and other accessory activities.

With respect to the physical engineered earthen structures, the scope of the project is limited to maintenance and repair of structures to bring them into compliance with the initial approved design and operating configurations.

Abandonment and reclamation of the Anvil Range Mine Complex is not included in the scope of this project, although the requirement for future abandonment and reclamation of the site is a mitigation put forward in the Screening Report. As well, the Fresh Water Storage Dam (FWSD) is not included in the scope of this project. The Interim Receiver is planning to breach the FWSD prior to the 2004 spring freshette. The FWSD breach project is undergoing a separate environmental assessment and regulatory review process.

5.2 Scope of the Assessment

The following factors and scope of factors must be considered to meet the requirements of EAA as set out in the definition of environmental effect and as described in Section 12(1) of EAA:

- The environmental effects of the project, including the environmental effects of malfunctions or accidents that may occur in connection with the project and any cumulative environmental effects that are likely to result from the project in combination with other projects or activities that have been or will be carried out;
- The significance of the these effects;

- Comments from the public that are received in accordance with EAA;
- Measures that are technically and economically feasible and that would mitigate any significant adverse environmental effects for the project; and
- Any other relevant matter that the RAs may require to be considered.

With respect the last item, there were no other matters that the RA required to be considered as part of the assessment.

The Anvil Range Mine Complex has been constructed and operated and as such has undergone previous assessments for various components of the project and received water licences. In accordance with EAA, the RAs have considered and utilized the previous assessments where appropriate.

The temporal scope of this assessment includes the environmental effects of the project for the period of the proposed project (5 years), plus the duration of any adverse environmental effects triggered during that time period. The spatial scope of this assessment includes the environment (land, air, water) within, and adjacent to, the project boundaries, as well as any other area affected through the administration of the project. This corresponds to the Local Study Area (LSA) and Regional Study Areas (RSAs) identified by the proponent.

6.0 CONSULTATION PROGRAM

The Environmental Assessment Unit broadly distributes a Quarterly Public Bulletin which contains summaries of environmental assessments and provides contact information if anyone has any questions. The environmental assessment of the Anvil Mine Range Mining Complex 2003 to 2008 Water Licence Renewal, was included in previous bulletins, however there were no public inquiries regarding the project or the assessment.

The Environmental Assessment Unit maintains a Public Registry of the relevant documents for major environmental assessments including the Anvil Range Project. Included in the Public Registry are copies of all comments received during the environmental assessment process. The public can review the documents on file during regular business hours. No comments from the public were submitted in regards to documents on the Public Registry.

The Project Description was broadly circulated to government, First Nations, and non-government agencies for comment (see Appendix C for the Anvil Range RERC Distribution List). The Project Description also underwent a public review. No comments were received during this public review. Two public information sessions were held: one in Whitehorse on August 21, 2002 with 24 people in attendance and one in Faro on August 23, 2002 with 9 people in attendance. A meeting was held with representative of the Ross River Dena Council on October 10, 2002 to discuss the Project Description and the associated environmental assessment process. A community meeting

was also held in Ross River on October 25, 2002. Comments received from the review of the Project Description were incorporated into the Draft EAR Guidelines. A meeting was held in Ross River with representatives from the Ross River Dena Council and members of Selkirk First Nations to discuss the draft guidelines. Final EAR Guidelines were developed incorporating relevant comments raised during the review of the draft guidelines.

The Environmental Assessment Report (EAR) was also circulated to the Yukon Environmental Review Committee (YERC), including representatives from government, First Nations, and non-government agencies, for comment. This document was also made available for public review. Individual meetings were held with the various reviewers during the EAR review period, including Environment Canada, DFO, Government of Yukon Water Resources, Ross River Dena Council, and the Town of Faro. The comments received from the reviewers regarding the EAR, including the Town of Faro and the Ross River Dena First Nation, were incorporated, where applicable, into an initial draft Screening Report. This initial draft was circulated to members of YERC for comment. Comments received from phase of review were then incorporated into a final draft Screening Report. This report was distributed to YERC and offered to the public for review. Comments received during this public review period have been incorporated, where appropriate, into the final Screening Report.

7.0 DESCRIPTION OF THE EXISTING ENVIRONMENT

A summary of the existing environment was provided to the reviewers by the proponent in Volume II of the Project Description and Volume II of the EAR. The reader is referred to these two comprehensive documents for details of the project area setting.

7.1 General Regional Environmental Context

The project lies within the Yukon Plateau - North ecoregion. A general description of the ecoregion is provided below.

The Anvil Range Mine Complex is situated directly north of the Tintina Trench, approximately 20 km from the Town of Faro and 65 kilometres northwest of Ross River, in the Yukon Plateau – North ecoregion. This ecoregion lies within the Stewart, Macmillan, and Pelly plateaus and the southern foothills of the Selwyn Mountains and is characterized by rolling uplands, small mountain groups, and nearly level tablelands dissected by deeply cut, generally broad, U-shaped valleys. The Tintina Trench, a straight, steep-sided valley, 5 to 22 km wide, traverses the ecoregion from southeast to northwest.

This ecoregion has a mean temperature of -4°C, with a summer mean of 10.5°C and a winter mean of -20°C. Annual precipitation ranges from approximately 300 mm in the major valleys to 600 mm in the mountains to the northeast.

Northern boreal forest exists up to an elevation of 1500 m asl. Extensive, discontinuous permafrost with medium ice content is widespread, with decreasing to sporadic discontinuous permafrost along the southwestern edge of the region. The mine area is situated in an area of discontinuous permafrost.

Characteristic wildlife in this ecoregion includes caribou, grizzly and black bear, Dall's sheep, moose, beaver, fox, wolf, hare, raven, rock and willow ptarmigan, and golden eagle.

7.2 Description of Site Specific Environment

For the purposes of this assessment, two scales of study areas (local and regional) were used. The Local Study Area (LSA) is based upon the physical and hydrologic footprint of both mine sites, including the Haul Road. This is the area of immediate influence on the environment as a result of care and maintenance activities and is the area of interest as per the water licences. The Local Study Area extends from the site-specific background water quality sites upstream of each mine to the first monitoring point downstream of where the effluent stream specified in the existing water licences enters receiving waters.

Regional Study Areas (RSAs) are defined to incorporate data outside of the project footprint that may be important to the determination of direct effects on an environmental

component and to allow for examination of potential cumulative effects where project effects extend beyond the local study area. The RSAs were also defined related to effects on socio-economic, traditional use, and heritage resources.

Meteorological data has been collected in the area since 1967 at various climate stations. The mean annual temperature (1967 to 1980) is –3.4°C. July is the warmest month with a mean daily temperature of 11.5°C, and January is the coldest with a mean daily temperature of –19.8°C.

Mean annual precipitation in the area is 307.4 mm (1978 – 2001) with relatively equal portions of rainfall and snowfall. The driest and wettest months are typically April and July, respectively. Snow accumulation at the site usually begins in October and spring melt at the end of April. The average lake evaporation for the mine site is estimated to be 490 mm and calculated evapotranspiration values are 190 mm.

The Anvil Range Mine Complex lies in the traditional territory of the Kaska Nation, including the Kaska of the Ross River Dena First Nation, who has used the area for generations. As well, the traditional territory of the Selkirk First Nation is located downstream of the mine site.

The physiography of the area can be divided into three areas: Tintina Trench, Swim Basin uplands area, and the Anvil Range mountains. The landforms and surficial deposits of the mine site area have been shaped and are attributable to the last ice age, for the most part attributed to the McConnell glaciation. Significant surficial material in the area consists of bedrock and associated colluvium, glacial till, and glaciofluvial outwash sands and gravels. Glaciolacustarine, modern alluvial and organic deposits are also found sporadically.

The lower part of the Anvil District geological sequence is the most important with respect to the ore bodies at the mine site and is represented by the Mt. Mye and Vangorda Formations. The Mt. Mye Formation is represented by schists and the Vangorda Formation is represented by calcareous phyllites. A total of five ore bodies have been identified in the mine site area: Faro, Grum, Vangorda, Grizzly (previously DY) and Swim. Details of the geology of the three deposits at which mining has taken place can be found in Section 2.3 of the EAR.

Significant amounts of surficial material in the area consists of bedrock, glacial till and glaciofluvial deposits. The majority of the natural soil consists of granular soils such as local derived tills, glacial outwash deposits and fluvial deposits. The region is within an area of discontinuous permafrost.

Over the course of mine development there has been significant and permanent clearing of vegetation. Roughly 1,460 hectares of vegetation was removed for the development of the mine sites and haul road. Six vegetation zones have been identified in the regional area of the mine complex. These include flood plain forest, upland shrub, bog forest, alpine tundra, subalpine transitions, and alluvial plain shrub.

The regional water resource study area for the proposed project includes the Rose Creek watershed, upstream of the confluence with Anvil Creek, and Vangorda Creek watersheds, upstream of the confluence with the Pelly River. Anvil Creek and Vangorda Creek are tributaries to the Pelly River. The Rose Creek watershed is approximately 340 km^2 and flows to the 980 km^2 Anvil Creek watershed. The Faro Mine facilities are located within the Rose Creek watershed.

Mine development and ongoing water management has changed the site hydrology. These changes are primarily due to the interception and diversion of surface flows around mine site structures. Mining activities have also changed local groundwater flow regimes through groundwater interception, additional recharge and increased infiltration.

Vangorda Creek watershed is approximately 90 km^2 and is composed of two forks: mainstem and west. The two forks join immediately upstream of the Town of Faro. The Vangorda Plateau mine site is located within the Vangorda Creek watershed.

7.3 Valued Ecosystem and Cultural Components

7.3.1 Water Resources and Aquatic Habitat

As noted above, the Anvil Range Mine Complex is located in two major watersheds: Rose Creek and Vangorda Creek. Anvil Creek and Vangorda Creek are tributaries to the Pelly River. The Rose Creek watershed is approximately 340 km^2 and flows to the 980 km^2 Anvil Creek watershed. The Faro Mine site facilities are located within the Rose Creek watershed. Vangorda Creek watershed is approximately 90 km^2. The Vangorda Plateau mine site is located within the Vangorda Creek watershed.

Surface water quality at the Faro and Vangorda Plateau mine sites have been monitored routinely at a variety of stations since 1987. This includes mine operation, Vangorda Plateau development and periods of temporary closure. There is no historical water quality data available for pre-mining conditions. The surface water quality database includes data from 29 stations for the Faro site and 21 stations for the Vangorda Plateau site. These include:

- Reference (background) water quality stations;
- Effluent water quality stations; and
- Receiving water quality stations.

A comprehensive summary of the water quality data for the site is presented in Volume II of the Project Description and summarized in Volume II of the EAR.

Reference (or background) surface water quality for the Faro Mine site area can be characterized as neutral to alkaline with low concentrations of total suspended solids. Trace metal concentrations indicate mineralized geology with metal levels for aluminum, arsenic, cadmium, chromium, copper, and lead generally exceeding the Canadian Council

of Ministers of the Environment (CCME) Guidelines for the Protection of Aquatic Life (1999). Reference water quality for the Vangorda Plateau area is consistently neutral to alkaline with low suspended solids concentrations of 2 to 5 mg/l. Trace metal concentrations at these background locations also indicate mineralized geology, with levels of aluminum, arsenic, cadmium, chromium, copper, iron and lead typically exceeding CCME criteria for the protection of aquatic life.

The Town of Faro supplies water to the community from a well located near the confluence of Vangorda Creek and the Pelly River. Members of the Ross River Dena First Nation have identified certain creeks in the area that were used for drinking water including the confluence of Anvil Creek and the Pelly River and Reservoir Creek adjacent to the mine access road.

Groundwater at the site has been monitored since 1987 at a total of 38 locations. These included locations designed to monitor subsurface seepage from the Vangorda rock dump, Grum rock dump, Faro rock dumps and the Rose Creek Tailings Facility. These monitoring wells have varying periods of record due to a number of discreet installation programs. The most recent programs have focused on the Rose Creek Tailings Facility (1996 and ongoing studies), Vangorda rock dump (2001) and the Faro rock dumps (1996). There are no existing pre-mining groundwater quality data.

In areas where glacial deposits are primarily glaciofluvial sands and gravel, they represent relatively high-yield aquifers. Valley aquifers are usually unconfined, with shallow depths to water and significant groundwater yields. However, if confining layers exist, confined aquifers with significant hydraulic heads may be encountered.

7.3.2 Aquatic Resources

The aquatic resources of importance for the proposed project are sediment quality, benthic invertebrates, fish and fish habitat in both the Rose Creek and Vangorda Creek watersheds.

7.3.2.1 Fish habitat

The construction and operation of the Faro Mine Site has altered the Rose Creek watershed which resulted in historical impacts to fish and fish habitat. Some of these alterations include:

- Diversion of creeks from their original flow path;
- Creation of fish migration barriers through the installation of hanging culverts and rock drains; and
- Construction of water impoundments which converted steam habitat into lake habitat.

Presently in Rose Creek Arctic grayling is the predominant species. Lower Rose Creek, below the tailings ponds, consists of high quality habitat for spawning and rearing Arctic grayling and moderate habitat for adults. The Rose Creek Diversion Channel is

considered to have little rearing habitat and moderate spawning, winter and summer habitat. The habitat in the South Fork of Rose Creek below the Fresh Water Storage Dam is moderate for spawning and high for rearing and overwintering habitat. The Fresh Water Storage Reservoir provides high quality rearing and overwintering habitat while the section upstream of the reservoir is considered moderate value habitat.

Habitat in the lower reaches of the North Fork of Rose Creek is considered to be moderate to low value habitat. The upper portions of the North Fork provide high rearing and moderate spawning, summer and winter habitat, with the exception of the upstream end where a series of ponds are acidic with low dissolved oxygen. Faro Creek, which has been diverted around the Faro Main Pit, is considered to be of low habitat value.

Lower Vangorda Creek, below the Town of Faro access Road, contains important rearing habitat for Chinook and over-wintering habitat for Arctic grayling as well as some spawning, rearing habitat and summer habitat. Above the Town of Faro, a culvert and waterfall are barriers to fish migration upstream.

7.3.2.2 Fish Presence

Fish species present in the Rose Creek watershed include Arctic grayling, burbot, slimy sculpin, longnose sucker and round whitefish. Arctic grayling are the predominant species found in the Rose Creek watershed. Along with these species, juvenile chinook salmon can be found in lower Vangorda Creek from spring or early summer until outmigration in the fall. There have also been a few chinook spawners and fry noted in Anvil Creek.

7.3.3 Air Quality

Historically, activities associated with mining and milling at the Faro mine contributed sources of air emissions. No air quality data exists for the project area, however operational atmospheric emission sources were eliminated in 1998 with the termination of active mining. Current local air quality is expected to be good.

7.3.4 Terrestrial Resources

There is no scientific data specific to wildlife habitat in the local study area but the following is a summary of information on wildlife in the regional study area from Volume II Section 2.7 of the EAR.

Terrestrial resources in the project area include soil, vegetation, wildlife habitat and wildlife environmental components. Data are not available for all local species including population distribution data for moose, stone sheep or grizzly bears. A variety of wildlife and vegetation studies have been completed in the regional study area including terrain and vegetation mapping, wildlife habitat mapping, sheep population inventory, sheep migration, moose survey and caribou census.

Significant surficial material in the study area consists of bedrock, glacial till and glaciofluvial deposists. The majority of the natural soils located in the Anvil Range Mining Complex consist of granualar soils: locally derived tills, glacial outwash deposits and fluvial deposits.

In 1976, six vegetation zones were mapped in the regional study area: flood plain forest, upland forest, bog forest, alpine tundra, subalpine transitions, and alluvial plain spruce. Additional vegetation mapping completed in 2002 described regional ecosystem types within the study area. This described the land base by ecozone, landscape position and landscape type. Within the study area, the boreal zone contains forested low elevation bottoms and low-lying terrain. The majority of the waterbodies and wetlands are associated with this zone. The subalpine zone is dominated by tall shrub vegetation with scattered spruce and fir forests at lower elevations. The alpine zone exhibited treeless conditions with rock, low shrub and herb communites.

Wildlife species identified or expected in the regional study area are: sheep (including Fannin sheep), caribou, grizzly and black bear, moose, beaver, fox, wolf, hare, raven, rock and willow ptarmigan, and golden eagle.

Stone sheep are found within the regional study area. Fannin sheep, a unique colour morph of Stone sheep, are also found in the regional area. Stone sheep are a valued food source by resident hunters and members of the Ross River Dena First Nation. These sheep, particularly the Fannin sheep, are also highly valued as trophy animals and are of significant economic value to outfitters and for wildlife viewing. Data from population surveys indicate that the population of sheep in the area has remained stable since 1980. Various sheep migration routes have also been identified within the study area.

Moose are prevalent throughout the study area. The subalpine plateau of Game Management Subzone 4-45 is known to have the highest seasonal densities of moose in the Yukon and is acknowledged as a significant rutting and post-rutting area. Moose are highly valued as a food source by Ross River Dena, Faro residents and non-resident hunters. As well, they have economical value for outfitters in the area.

Caribou within the vicinity of the Anvil Range Mining Complex are considered to be members of the Tay River woodland caribou herd. The woodland caribou in this region are listed as a species of special concern by the Committee on the Status of Endangered Wildlife Species in Canada (COSEWIC, 2003). This designation is based on the population being sensitive to human activities or natural events, not endangered or threatened. Woodland caribou are a valued food source to members of the Ross River Dena First Nation, resident and non-resident hunters and have economic value for outfitters.

Grizzly bears can be found throughout the study area. They are also listed as a species of special concern by COSEWIC (2003). Grizzly bears are vulnerable to the impacts from human activities and are considered to be important indicators of ecosystem health. Grizzly bears in the area are valued by resident and non-resident hunters as trophy

animals, sometimes for food, and have economic value to outfitters. There is an indication that the grizzly bear population has experienced stress from increased hunting. Although no data exist, hunter success has declined.

Black bears also occur throughout the study area and are vulnerable to hunting. They are valued by hunters as trophy animals, have economic value, and are used in some cases for food. They also have high non-consumptive value. As with the grizzly bears, although no data exists, there is an indication that the black bear population has experienced stress due to increased hunting. As well, current mortality rates remain high in the regional study area.

Raptors such as bald eagles are known to occur in the regional study area and Peregrine falcons may occur. Peregrine falcons are listed as a species of special concern by COSEWIC (2003). Red fox, marten, lynx, least weasel, ermine, mink, snowshoe hare, and wolf likely occur in the regional study area.

7.3.5 Traditional/Heritage Resources

7.3.5.1 Traditional Use

Traditional land use refers to First Nations activities such as hunting, trapping, fishing, gathering and travel. Traditional land use is not only subsistence activities but social activities such as gatherings and cultural activities that are of spiritual importance and reflect the health of the community. The Ross River Dena people have used the study area for such pursuits for generations. Details of known documented traditional use data is contained in Section 2.9 of the EAR.

The development of the Faro mine and town has disrupted the Ross River Dena's use of this portion of their traditional lands. The intensity of use changed as the effects of the mine development were felt; such effects included infusions of recreational hunters and fishers, restrictions on access and firearms use, changing patterns of wildlife distribution and concerns over health risks related to consumption of country foods exposed to contaminated substances. Many traditional land users refocused their pursuits to other geographic portions of Ross River Dena traditional territory.

Members of the Ross River Dena community are reported to be undertaking traditional pursuits in the local and study area since the mine closed. Many individuals report that the landscape is virtually unrecognizable over predevelopment conditions, especially the once comprehensive traditional trail system. Concerns remain in the community regarding the effects of the mine on country foods and continued access restrictions yet the local and regional study areas continue to be used for traditional pursuits.

7.3.5.2 Heritage Resources

Heritage resources are broadly defined as material remains that relate to human history. In the current context, this may include places of spiritual and cultural importance,

cabins, gathering areas and graves. Such resources are of considerable importance to the Ross River Dena people. Details of known documented heritage resource values are contained in Section 2.10 of the EAR.

No formal archaeological or historic inventory work has been completed in either the local or regional study areas. However, heritage resources are known to exist adjacent to the regional study area; this suggests that there could be undocumented sites in the regional and local study areas.

7.3.6 Socio- Economic Conditions

The proponent defined the Regional Study Area for the socio-economic conditions as the Anvil Range area with the Pelly River and the Campbell Highway as the southern boundaries, the Ross River as the eastern boundary and the Tay River as the western and northern boundaries. Details of the socio-economic conditions in the project area are contained in Section 2.8, Volume II, of the EAR. The area defined by the RSA is a significant area of use for residents from the Town of Faro, the community of Ross River and other Yukon communities. Subsistence and recreational hunting and fishing are prevalent in the project area. As well, the Town of Faro is promoting the region as a target market for both local and international travelers. The Official Community Plan (OCP) describes the existing economy of the Town of Faro as an amalgamation of various activities including:

- Small business sector and home based businesses;
- Mine care and maintenance and reclamation opportunities;
- Government employment;
- Wilderness tourism (fishing, recreational and guided hunting, canoeing, etc.);
- Cultural events;
- Robert Campbell Highway tourism; and
- Home base for those working away.

General land and resource use in the area includes hunting and fishing activities.

7.4 Potential Environmental Hazards

Geological hazards resulting from natural conditions have the potential to significantly impact facilities and infrastructure at a mine site. Section 2.4, Volume II of the EAR, provides a summary of the environmental hazards based on a review of geological information. Geological hazards have the potential to significantly impact facilities and infrastructure at the mine site. Some potential geological hazards that may exist at the Anvil Range Mine Complex include:

- Landslides (rock or soil);
- Rock falls;
- Debris torrents; and
- Fault movements.

The majority of natural soil located in the project area consists of granular soils that are not particularly prone to slope stability hazards. Slope stability issues will likely be confined to local failures due to oversteepening and eroding by water. Colluvial deposits typically located on the steeper sections of the surrounding Rose Creek or Vangorda Creek valleys could provide erratic rockfalls into the valley or local small slides.

The areas most likely to experience rockfalls are the exposures located above the FWSD reservoir and the Rose Creek Diversion Canal.

Debris flows may occur in the upper reaches of the surrounding mountains along some headwaters of the creeks and feed soil and rock into the mine site area.

Fault movement hazards include impacts to structures and slopes and rock slides. There are four known major faults within the mine complex. The major regional fault is the Tintina Trench, located close to the study area. The major hazard is fault movements that induce earthquakes. If a fault is located in the immediate mine area, the fault movement can impact structures and slopes. Another hazard related to faults is the local control of slides.

Earthquakes, which can produce both ground ruptures and seismic shaking, have potential impacts on engineered structures, such as dams and water diversion structures. A number of studies of seismicity at the Anvil Range complex have been conducted over the life of the mine to estimate the peak ground acceleration (PGA) and seismic risk. The seismic loading design criteria at the site have been quite variable, although the design horizontal acceleration for the 475-year return period has been relatively consistent from 0.05g to 0.08g. Using the maximum credible earthquake (MCE) as twice the magnitude of the 475-year event, results in relatively consistent values for the magnitude of this event (0.10g to 0.16g).

There have been two significant seismic events measured at the Anvil Range Complex site in 2002. On November 3, 2002 a magnitude 7.9 earthquake occurred approximately 120 km south of Fairbanks, Alaska. On November 5, 2002 a second seismic event occurred when a magnitude 4.6 earthquake occurred approximately 50 km south of Faro. Both events were felt by mine staff at the site, but there were no impacts on site facilities.

Extreme precipitation and snowpack events could detrimentally affect the physical mine site components. Two extreme flood events, Probable Maximum Flood (PMF) and 500-year peak instantaneous flood, were developed in 1996 for several key locations around the mine sites to provide the basis for conceptual design of spillways and diversions structures.

8.0 Predicted Environmental Effects of the Project and Mitigation

As outlined in the EAR, the development and operation of the Anvil Range Mine Complex has had a demonstrable impact on the aquatic and terrestrial receiving environments. Many of the existing mine site facilities continue to have an ongoing impact. The proposed care and maintenance activities and related projects are designed to provide short-term mitigation of the impacts related to the site with the intent, to the extent possible, to prevent accelerated degradation of key environmental components. Only through the implementation of a Final Closure and Reclamation Plan can long-term mitigation of environmental effects be achieved.

Given this, the analysis of potential effects is limited to the effects of the proposed project on the receiving environment and does not include the effects associated with the historical development and operation of the mine. The project, as discussed in Section 5.1 (Scope of Project) includes the actual mine site components (waste rock dumps, tailings facility, etc.) and the proposed care and maintenance project including new activities/undertakings, adaptive management program, ongoing studies and other accessory activities.

8.1 Methodology

8.1.1 Analysis of Effects

The proponent provided an assessment of the environmental effects of the project based on an assessment of the effects of the activities proposed as part of the care and maintenance program. However, under EAA the environmental assessment must also consider the environmental effects of existing mine components, specifically the impact of the waste rock dumps and tailings on the receiving environment. As outlined in the EAR Guidelines, the environmental assessment is based on the predicted effects the entire project will have on the environmental components and the ecosystem as a whole. This includes the effects of the current mine site conditions, in conjunction with the proposed activities and undertakings, on the receiving environment. In utilizing a risk based management approach, the proponent is effectively already considering the overall project effects and attempting to manage those components which are most likely to cause significant adverse effects.

The proponent also evaluated the project effects based on the 2004 to 2008 timeframe and compares the anticipated conditions during the proposed project to those existing during the 1998 to 2002 care and maintenance period. The proponent chose this method of assessment because a comparison to pre-mining conditions would be a hypothetical one and felt it would not reflect the reality at the site. The implication of this assessment method is that the effects being evaluated are relative rather than absolute in nature. This method evaluates whether there will be any changes in the existing environment due to the project. The RAs determined that for those VECC where there were no applicable

guidelines or standards, that the methodology for effects assessment put forward by the proponent is suitable. With respect to water resources, specifically water quality, the CCME Canadian Water Quality Guidelines for the Protection of Freshwater Aquatic Life can be used, in conjunction with existing background receiving water conditions, to assess the potential effects of the proposed project. Although the approach taken by the proponent did not provide an assessment of the absolute effects of the proposed project on the aquatic receiving environment, information provided by the proponent facilitated the RAs in evaluating the "absolute" effects.

In the Yukon's EAA Practitioner's Guide (2003) on the determination of significance, it states that the appropriate criteria must be applied to determine if an environmental effect is adverse, significant or likely. It further states that the most common way to determine if effects are adverse is to compare the quality of the environment before the project with the predicted quality of the environment with the project in place. In the absence of any historic pre-mining information of the quality of the aquatic receiving environment, background conditions (where available), in conjunction with CCME guidelines, are being used to assess the effects on the aquatic receiving environment. This comparison to baseline conditions is essential for the identification of necessary mitigation to minimize or eliminate likely adverse effects in the long-term.

8.1.2 Determination of Significance

The RAs are responsible for determining whether the environmental effects of the proposed project are adverse, significant, and likely. This decision is based on the information provided by the proponent and any other information the RAs considers appropriate. The determination of significance and the likelihood of environmental effects are carried out on residual effects that remain after the appropriate mitigation.

For the determination of significance, the Yukon's *Environmental Assessment Act* (EAA) Practitioner's Guide states that environmental standards, guidelines and objectives are commonly used to establish the significance of adverse environmental effects. As well other methods and tools for determining significant include professional judgment, statistical significance, risk assessment and weighting and ranking methods. Criteria for determining significance include: magnitude, geographic extent, duration and frequency, reversibility and ecological context.

The methodology that the proponent used to determine the significance of residual effects is outlined in Section 4.4, Volume III, of the EAR. In this case, magnitude, geographic extent, duration, frequency, reversibility and ecological context were considered by the proponent in determining significance. Where appropriate, the RAs utilized the proponent's determination of significance for the residual effects of the proposed project.

The method used by the RAs to determine significance for their assessment was consideration of existing site and receiving environment conditions, CCME receiving water criteria, duration of the potential effect, implementation of a comprehensive closure

plan, and consultation with expert technical advisors for their opinion on project effects, mitigation and significance.

8.2 Project Effects on Environmental Components

8.2.1 Water Resources

The reviewers acknowledge that the majority of the activities proposed as part of the project are mitigation measures to ensure that any increase in the environmental liability at the site is minimized and to ensure compliance with the existing licence criteria. As well, they acknowledge that since 1998, the management of the site has resulted in more stable site conditions.

Routine water quality monitoring has occurred at the mine site since 1986. The mine operates with effluent quality standards for waste water as stated in the existing two water licences. The water licences do not stipulate downstream receiving water quality standards for care and maintenance. However for closure planning purposes, they do stipulate using CCME Canadian Water Quality Guidelines for the Protection of Freshwater Aquatic Life. These, in conjunction with background concentrations were used to assess downstream water quality and possible effects on aquatic life. This is consistent with the Government of Yukon's general approach for environmental assessments where there is a discharge of waste. Given that water quality and aquatic resources are inextricably linked, it is recognized that any impacts on water quality will likely result in impacts to fish.

The proponent identified water quality as a key water resource consideration for this project. As a result of the proponent's environmental assessment, no new discharges or activities would alter existing water quality conditions or stream flow, and therefore the proponent concluded that no predicted environmental effects are expected for the term of the proposed water licence. As discussed above, this is based on an analysis of "net", not "absolute", environmental effects.

The RAs analysis of current water quality at the site (based on 1998 to 2002) indicates that the proposed project will have an ongoing effect on the receiving water environment. Using the mean values (1998 to 2002) for background water quality, discharge levels and receiving water quality provides a prediction of the anticipated conditions over the five year term of the licence. It should be noted that this analysis does not include the potential inputs of contaminated groundwater.

Based on current site and operation conditions presented in Section 5 of Volume II of the EAR, elevated concentrations of contaminants have been and will continue to be found in the receiving environment. (For example refer to Figure 8.1 for the Faro Mine Site and Figure 8.2 for the Vangorda Plateau, for a graphical presentation of the zinc and sulfate levels in the receiving environment.) It is evident that, although providing short-term mitigation, the continued care and maintenance of the site will not prevent elevated levels

of contaminants in the receiving environment, at levels above current background and CCME values.

The following is a summary of the RAs' assessment of water quality impacts at the Faro Mine Site from the various mine components and care and maintenance activities evaluated against background water quality for Faro Mine Site taken from Section 2.5.4.3 EAR (average Faro Creek, Guardhouse Creek and N. Fork Rose Creek);

- Station X2 – North Fork Rose Creek at mine access road;
  - Elevated levels likely due to impact of seepage from waste rock dumps.
- Station X14 – Rose Creek downstream of tailings facility and effluent discharge;
  - Elevated levels due to impact of direct discharge from tailings facility and runoff and seepage from upstream mine site components.
- Station R3 – Rose Creek mid length;
  - Elevated levels with partial dilution.
- Station R4 – Rose Creek upstream of Anvil Creek; and,
  - Elevated levels with partial dilution.
- Station R5 – Anvil Creek downstream of Rose Creek
  - Reduction in levels due to the dilution effect of Anvil Creek.

The following is a summary of the RAs' assessment of water quality impacts at the Vangorda Plateau from the various mine components and care and maintenance activities evaluated against background water quality for Vangorda Plateau from Section 2.5.4.4 EAR (average upper Vangorda Creek and Shrimp Creek);

- Station V27 – main stem Vangorda Creek, downstream of mine site components and effluent discharge;
  - Elevated levels due to impact of direct discharge of effluent, runoff and seepage from upstream mine site components.
- Station V8 – lower Vangorda Creek upstream of confluence with Pelly River
  - Reduction in zinc levels possibly due to dilution.

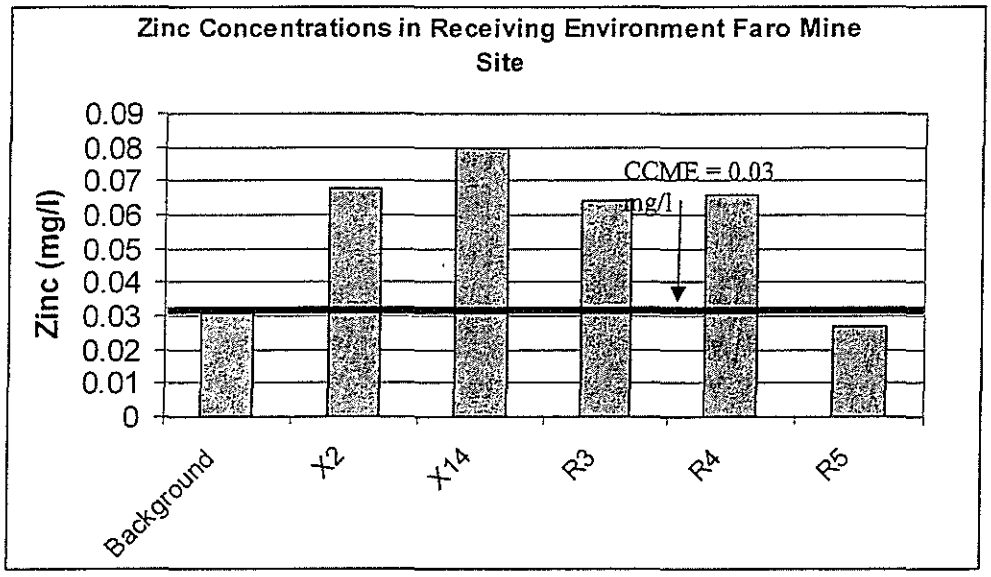
It should be noted that this assessment of impacts does not take into account the potential impact of contaminated groundwater from the Rose Creek Aquifer. According to Environment Canada, there is an estimated total of 35,000 tonnes of soluble zinc stored in the tailings in the Rose Creek Valley. The stored load of soluble zinc will likely continue to increase as more of the tailings are allowed to oxidize under the current storage conditions. Of significant concern to the RAs is the impact of this on the receiving environment, specifically when, and at what magnitude, this contaminated groundwater will start impacting Rose Creek.

As discussed in Section 2.5.5.4, the baseline groundwater quality in wells downgradient of the Cross Valley Dam near the valley centre contain relatively low zinc (0.03 mg/l median value) and low sulfate concentrations with a slight increasing trend over time. The groundwater quality on the north side of the valley has low zinc and elevated sulfate levels. Contaminants that have leached from the tailings are present in the native aquifer beneath the tailings impoundment. Based on sulfate concentrations, it has also been found that migration extends downgradient of the tailings deposit to the toe of the Cross

Valley Dam. Studies are ongoing to evaluate the extent of contamination and the rate of movement within the aquifer.

The ongoing degradation of the various waste rock dumps is also not reflected in this assessment. As outlined in the EAR, waste rock from both areas consists of rocks with geochemical characteristics ranging from already acid generating to potentially acid generating and acid consuming. The existing monitoring data indicates that although seepage is non-acidic, it often contains elevated concentrations of cadmium and zinc. The effects of the seepage from some of the waste rock dumps is already evident as indicated by elevated zinc and sulfate levels in both groundwater monitoring wells and surface water. At many of the groundwater monitoring locations, the baseline quality is impacted by seepage from the dumps.

Water quality will likely continue to deteriorate in groundwater under the tailings and downgradient of waste rock dumps. The proposed AMP (Section 8.2.1.5), which supplements the care and maintenance program provides a framework for responding to unforeseen events related to groundwater degradation due to seepage from the rock dumps or tailings. While the proposed care and maintenance project provides for short-term mitigation of the effects of the deterioration of the site, ongoing degradation of the receiving environment can only be mitigated through the implementation of a long-term closure plan.



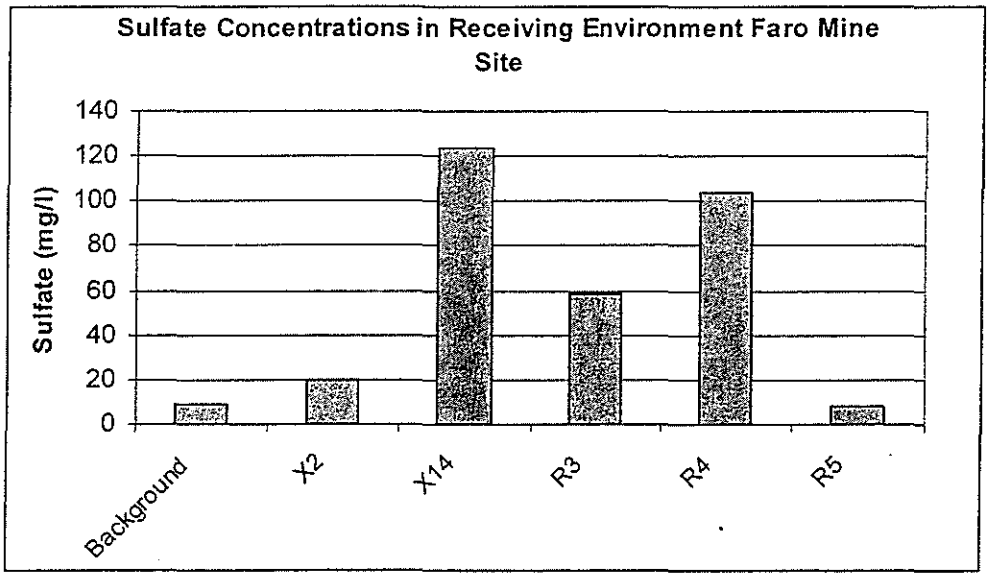
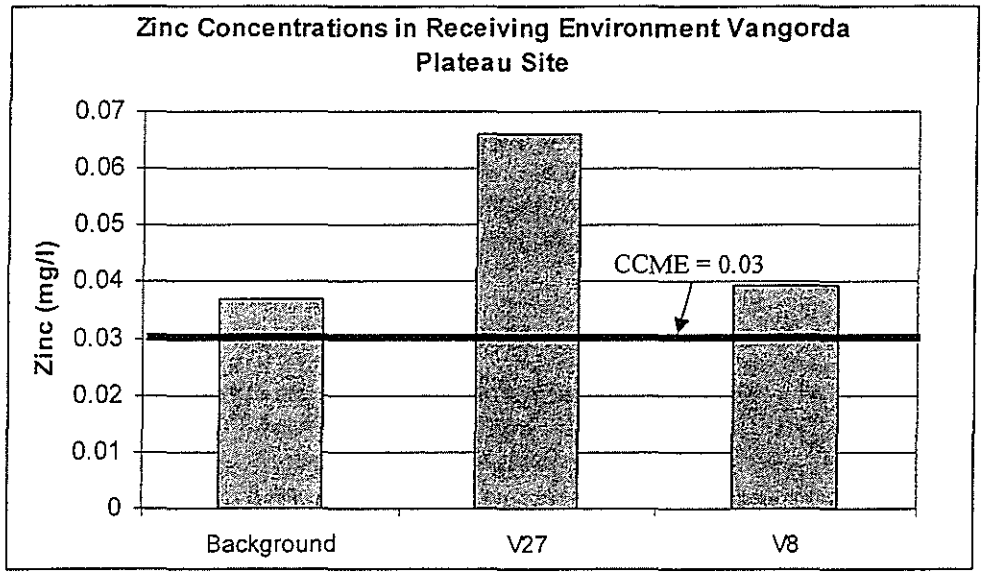


Figure 8.1 Mean Concentrations for 1998 to 2002 at the Faro Mine Site



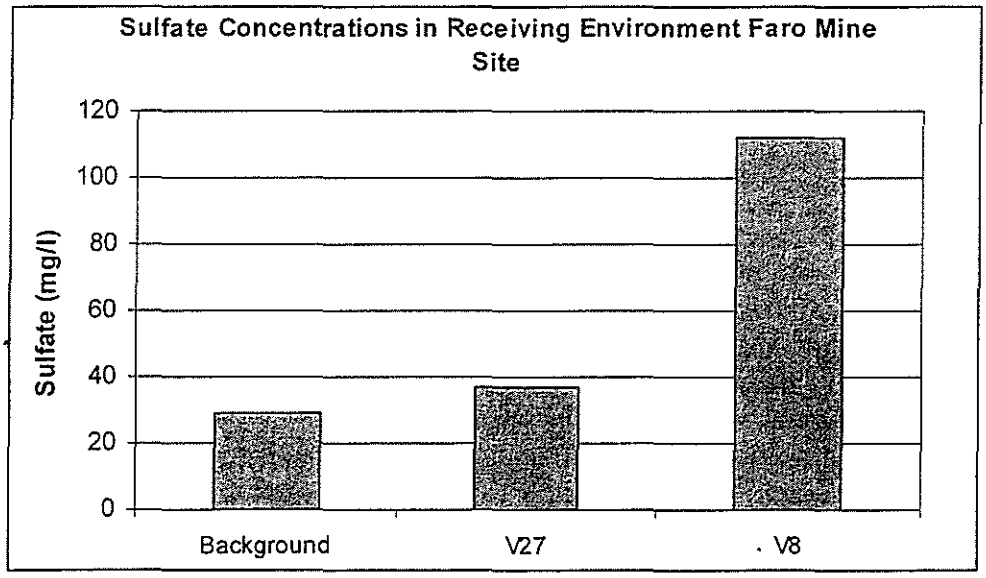


Figure 8.2 Mean Concentrations for 1998 to 2002 at the Vangorda Plateau Mine Site

Over the five year term of the licence, the ongoing elevated water quality levels are not likely to have significant adverse effects on the aquatic receiving environment. This is based on the expectation that the proposed care and maintenance activities will be implemented as laid out in the EAR and Water Licence application and the implementation of comprehensive closure plan commencing at the end of the proposed licence period. The RAs recognize the additive nature of the surface and groundwater contamination as well as the inherent nature of acid rock drainage (ARD) and the potential for increasing levels of oxidation in the tailings and waste rock. If a delay in initiating closure occurs, the risk factors will continue to increase and the site will continue to degrade and discharge increasing levels of contaminants to the environment. The consequence of this may result in a significant adverse environmental effect.

Mitigation

To provide for short-term mitigation of the effects of the site on the environment, the proponent must implement the proposed care and maintenance project and related activities as laid out in the EAR and Water Licence application, incorporating the mitigation put forward as part of this Screening Report.

To ensure long-term mitigation against degradation of the water quality a comprehensive Final Closure and Reclamation Plan (FCRP) must be submitted for review and approval, with the objective of receiving approval prior to the expiration of the proposed licence. The plan must be developed to meet the established closure criteria set out in the existing water licence: CCME Guidelines for the Protection of Aquatic Habitat, Probable Maximum Flood (PMF) and maximum Credible Earthquake (MCE).

The assessment of effects outlined above is based on existing CCME criteria for the various parameters, including zinc. Recently CCME has been providing guidance on how to develop site-specific zinc receiving water objectives based on hardness. Other jurisdictions (i.e. British Columbia) have adopted the hardness modifications in their objectives. Based on discussions with technical experts from Environment Canada, this will result in a site-specific receiving water objective for Rose Creek of 0.007 mg/l in the summer and 0.2 mg/l in winter. Presently the CCME objective for zinc is set at 0.03 mg/l. To minimize impacts on the receiving water, the proponent should evaluate the proposed water management regime to investigate possible modifications that could be made to the discharge scenarios to incorporate the hardness modification to the zinc receiving water criteria. This should include the effects that groundwater may have on surface water quality.

Mitigation

The proponent should evaluate the water management regime in the Anvil Range Mine Site to investigate alternative discharge scenarios that incorporate the hardness modification to the CCME zinc receiving water quality criteria. This

evaluation should include the effects that groundwater may have on surface water quality conditions.

A consistent concern raised by many of the reviewers was the potential for increased environmental liability at the site while the FCRP is being developed and the subsequent impact on the receiving environment. The RAs recognize that the goal of the proposed project is to deal with all known and potential environmental management issues at the site and ensure that there is a minimal increase in environmental liability. An essential component to the ongoing management should be the reduction in the environmental effects on the aquatic system in a timely manner to the extent possible.

Mitigation

As necessary the proponent should work with the Type II Mines Project Office, regulators, government agencies, First Nations and stakeholders, to develop plans to deal with ongoing reduction and/or prevention of increases in the environmental liability at the site. These plans should be submitted to the appropriate regulatory agencies for review and approval prior to implementation.

The following sub-sections discuss concerns raised with respect to water quality during the review of the EAR in relation to specific project components.

8.2.1.1 Rose Creek Tailings Facility

In the EAR, it is stated that the benefits of maintaining the water level in the intermediate pond below the overflow for the duration of the five year licence period exceed the potential disadvantages of increased oxidation of tailings solids and contaminant loading . Although this may be a benefit in the short-term, there is a concern about the impact of this approach on the long-term liability. Therefore, the proponent is requested to evaluate the water management regime for the Intermediate Pond, considering the long-term increase in of liability due to increased oxidation of tailings.

Mitigation

The proponent should evaluate the water management regime for the Intermediate Pond. This evaluation should investigate the effects of increased oxidation of exposed tailings materials over the five year term of the licence on the long-term liability of the site.

8.2.1.2 Faro Water Treatment – Sludge Disposal

According to Section 5.2.1.4, the treatment sludge from the mill water treatment system are periodically removed to the Intermediate Impoundment of the Rose Creek Tailings Facility. Given the lack of information on the characterization of the treatment sludge and potential for re-release of metals, sludge disposal must be done in such a way as to minimize impacts on the receiving environment and reduce the likelihood for increases in

long-term liability. Given these concerns, the RAs believe that the proposed method may not be an appropriate method of disposal for this sludge. The RAs acknowledge that the proponent is planning to carry out a sludge management study and develop a management plan for the duration of the proposed care and maintenance project.

Mitigation

In the interim period, while the management plan is being developed, the sludge generated from the mill treatment systems should be disposed of in a secure location so that if they become unstable and release metals, the resulting effluent is subject to an effective treatment system.

8.2.1.3 Oxide Fines

Concerns were raised by several reviewers as to the temporary nature of this proposed activity. It was considered that double handling the material may result in increased release of contaminants and pose unwarranted additional costs. Reviewers also questioned whether the proposed covers were the appropriate method to mitigate against ARD from these oxide fines. The proposed method of storage has no containment or impermeable bed cover and would not prevent contamination of the underlying ground. An expanded discussion of the options for the oxide fines piles and clarification of the objectives of doing this work was requested by the RAs.

The proponent responded to these concerns, stating that other options for the reclamation of these piles may be brought forward prior to the work being carried out and such options would be considered for implementation. The proponent committed to have the proposed reclamation measure complement the long-term closure objectives of the site.

Given the above concerns and lack of information on the proposed reclamation of the oxide fines, the RA(s) were unable to adequately assess the environmental effects of the proposed activity. Once the various options have been evaluated, the proposed reclamation work must be submitted to the appropriate regulatory agency for review and approval.

Mitigation

The proponent must submit for review and approval by the appropriate regulatory agencies a plan for proposed reclamation work for the oxide fines that meets with the long-term closure objectives of the site.

8.2.1.4 Bioremediation Cells

As discussed in Section 6.2, the proponent plans to build two bioremediation facilities, one at each site, for treatment of hydrocarbon contamination and has outlined a conceptual design. Based on the treatability studies, the proponent will be able to determine the nutrient addition rate and if any inoculation with microbes is required.

Environment Canada identified that the use of microbes for the inoculation of soil is subject to the *Canadian Environmental Protection Act* (CEPA), with the requirements a function of the specific proposed activity. The proponent has committed to cross-reference any bacteria or nutrients that will be utilized for compliance with CEPA.

Since only a conceptual design was provided and to ensure no impacts to the receiving environment the proponent must provide detailed design information of the bioremediation process and facilities prior to construction.

Mitigation

Once developed and prior to construction and operation, the proponent must provide detailed design information for the bioremediation facilities to the appropriate regulatory agencies for review and approval.

8.2.1.5 Adaptive Management Plan

As discussed previously, the proponent has proposed an Adaptive Management Plan (AMP) that provides a framework for responding to unforeseen events related to the degradation of the mine facilities. For those AMP items dealing with water quality, the principle concern is the ability of the existing monitoring frequency at the trigger locations to fulfill the trigger requirement for "a sustained and statistically significant increase over the 1998 to 2002 baseline". For many of these locations, the EAR states that the proposed site water monitoring protocol provides adequate frequency for activation of the response trigger. For some of the trigger locations, sampling is limited to twice a year in the spring and fall. Concerns were raised by many of the reviewers about the ability of the existing sampling frequency at the proposed trigger locations to fulfill the AMP objectives.

Mitigation

- To ensure that there are sufficient samples, the proponent must submit a plan for monitoring at the proposed trigger locations to the appropriate regulatory agencies for review and approval to ensure adequate sampling frequency and proper trigger monitoring locations to fulfill the AMP trigger objectives.

Presently, EC has estimated that there is 35,000 tonnes of soluble zinc in the Rose Creek Tailings Facility which could potentially migrate to the aquifer and eventually downstream to Rose Creek. The proponent is continuing studies to investigate the hydrogeology and contamination of the aquifer. At present, the extent of contamination, magnitude and movement are relatively unknown. To provide for short term mitigation of the potential effects of groundwater contamination on the Rose Creek Aquifer and the downstream receiving environment, the IR has proposed two AMP components: Degraded Water Quality in the Rose Creek Valley Aquifer and Degraded Water Quality in Rose Creek Downstream of the Mine Facilities. The groundwater AMP item's trigger

for action is proposed to be the groundwater quality in the aquifer. The actual monitoring stations proposed were not outlined in the EAR. To ensure adequate implementation of this component of the AMP, the monitoring system must be designed in a way to detect any changes. This includes the proper location of the trigger monitoring locations. As well, the proposed plan must be adaptable to augment data from the monitoring wells and ongoing studies in the aquifer.

Mitigation

To ensure adequate implementation of the Rose Creek Aquifer component of the AMP, the monitoring system must be designed in a way to detect any changes. This includes the proper location of the trigger monitoring locations. As well, the proposed plan must be adaptable to augment data from the monitoring wells and ongoing studies in the aquifer.

Concerns were also raised by reviewers as to the suitability of the proposed trigger data set for the Rose Creek water quality AMP component. Specifically, the suitability of the 1998 to 2002 baseline data set to provide the trigger requirement. During 1998, there were instances where the effluent discharged from the Cross Valley Pond was non-compliant. This was due to an accumulation of treatment sediments in the pond. The treatment sediments were subsequently removed from the pond. The reviewers believe that using the 1999 to 2002 baseline would provide more representative data set.

Mitigation

To ensure adequate implementation of Rose Creek component of the AMP, the baseline for the trigger locations should modified to 1999 to 2002 to avoid any skewing of the data due to the treatment upsets in 1998.

Reviewers also raised concerns that there is no specific AMP identified that would trigger a response in regard to degraded water quality in Vangorda Creek. Although, as outlined in the proposed AMP, there is a trigger location in Vangorda Creek as part of the AMP item for seepage from the Grum Rock Dump. To provide for a broader investigation for the response trigger for the degradation of water quality in Vangorda Creek, the response for this AMP item should be expanded to also include the investigation of the Vangorda Rock Dump area as a potential source.

Mitigation

To provide for a broader response in regard to degraded water quality in Vangorda Creek the staged response to degraded water quality in Vangorda Creek as identified in the Grum Dump AMP item must be expanded to include the Vangorda Rock Dump area.

8.2.1.6 Town of Faro - Drinking Water Supply

The drinking water supply for the Town of Faro is drawn from wells within the alluvial fan of Vangorda Creek upstream from its discharge into the Pelly River. The Town of Faro has expressed concern regarding the potential for contamination of its community drinking water supply through either a failure of upstream mine components or groundwater contamination of the aquifer. With respect to the failure of upstream structures, the only water retaining structure located upstream in the Vangorda Creek watershed that is not covered through the proponent's contingency plans and that could potentially fail is the Little Creek Dam. The Little Creek Dam has a reservoir capacity of approximately 120,000 m^3. Under the proposed care and maintenance plan, the non-compliant water from the Little Creek Pond is pumped to Vangorda Pit on an as-required basis. The volume of water retained is kept to a minimum. The proponent has contingency plans and operating procedures in place to provide for potential accidents and malfunctions with respect to the other mine structures located in the Vangorda Plateau. Therefore, the proposed project is considered to have minimal impact on the Town of Faro water supply through the failure of upstream mine components.

The Town of Faro is also concerned about the potential for contamination of the aquifer serving the town well. This concern was also highlight by Government of Yukon, Department of Health and Social Services. The Town is very concerned that adequate mitigation is in place to protect their water supply, presumed by the Town to be an unconfined aquifer, which may be highly influenced by the quality and quantity of water reporting to the alluvial fan from the Vangorda Plateau. Presently, based on available information, the RAs are unaware of the relationship, if any, between Vangorda Creek and the water supply wells. To ensure that the proposed care and maintenance project does not impact the Town of Faro water supply, an evaluation of the linkages between Vangorda Creek and the water supply wells should be completed.

Mitigation

The proponent should carry out an evaluation of the relationship between Vangorda Creek and the water supply wells for the Town of Faro, including an evaluation of the potential of contamination in Vangorda Creek to affect the Town's water supply. This evaluation should also include recommendations for monitoring programs, and any mitigative actions.

8.2.2 Aquatic Habitat

8.2.2.1 Fish and Fish Habitat

Adverse Project and/or human impacts to fish generally occur through:

- Water quality changes;
- Direct capture (angling/netting pressure);
- Destruction of habitat.

As noted in Section 8.2.1 (Water Resources), any impacts to water quality from the project will likely result in impacts to fish. Therefore the effects, mitigation and

significance of the project's effects on water quality are also important in relation to the effects on fish.

The fish in the receiving environment have been, and will continue to be, exposed to elevated levels of metals as a result of the proposed project. Metals in fish tissue have been sampled in the Anvil and Vangorda systems since 1974. The most recent were collected in 2002. Metals in fish tissues appear to have increased between 1975 and 1992, although without adequate controls site data, a full assessment of this trend is not possible. Results from the 2002 sampling program indicated that there is no trend of increased levels in fish in the receiving environment relative to the reference sites. Although there are no proposed changes to the care and maintenance project that will directly result in the increase of contaminants in the receiving waters, indirect inputs from groundwater may result in increased levels of contaminants.

The additive effects of metal concentrations from surface and groundwater inputs and the potential for increased exposure for fish within the project area demonstrate the need to limit the duration of ongoing care and maintenance. Any consequential information gaps and and/or mitigative approaches in relation to metal concentrations in fish must be addressed in the final closure plan.

With respect to direct capture, traditional activities have historically centered on hunting and fishing activities. The project does not contribute further to traditional or recreational fishing in any way that poses the potential for significant adverse effects on local fish populations.

There are no proposed project components that require the construction of major structures that may have an effect on fish or fish habitat.

Mitigation

To facilitate the development of the proposed Final Closure and Reclamation plan, the proponent is required to continue monitoring activities for fish presence and metal content in fish over the period of this project.

8.2.2.2 Sediment

Sediment sample analyses from 1999, 2001, and 2002 demonstrate that nearly all Rose Creek and Rose tributary sample results exceeded the Interim Sediment Quality Guidelines (ISQG) for copper, lead, and zinc. Copper from sediment in Vangorda Creek at V27 exceeded the ISQG. Lead from sediment at V27 and V8 exceeded the Probable Effects Level (PEL), and zinc from sediments at V27 and V8 exceeded the PEL and ISQG respectively.

Metals in sediment demonstrate a generally increasing trend over time however sources of this increase have yet to be fully characterized. The additive effects of metal concentration in sediment occurring within the project area demonstrate the need to limit

the duration of ongoing care and maintenance. Consequential information gaps and and/or mitigative approaches in relation to metal concentrations in sediment must be addressed in the final closure plan.

8.2.2.3 Benthic Invertebrates

Benthic invertebrates, which include insects, crustaceans, and aquatic worms, are often used as a measure of ecosystem health. Impacts to watercourses such as substrate composition, water flows, and, water and sediment quality can affect benthic organisms.

Benthic invertebrate population monitoring has been conducted every second year since 1991 at 10 separate monitoring stations in and adjacent to the project area. Observations of historical abundance and richness at Rose/Anvil Creek and Vangorda Creek have demonstrated a static to slightly increasing trend.

These observations indicate that the care and maintenance activities are not degrading benthic conditions. It is therefore anticipated that the care and maintenance program proposed for the next 5 years is unlikely to have an adverse effect on the benthic community.

8.2.3 Wildlife and Terrestrial Resources

Regional wildlife studies have monitored wildlife population levels. However, potential effects on the local scale are difficult to separate from these broader studies. Little or no empirical data are available from 1998 onwards to determine effects of current care and maintenance activities on the majority of wildlife within the area.

In 2002 a field program was conducted to determine if soil and plants near the mine have elevated elemental concentrations in comparison to background levels. Study results demonstrated that soil and vegetation concentrations of arsenic, silver, cadmium, chromium, copper, mercury, nickel, lead and zinc are above background levels. Examination of the collected data indicates that the probable origin of these elevated levels is airborne dust contamination from mine site sources. Uptake of metal concentrations in wildlife species may result in adverse effects through reduced fitness or through mortality.

Mitigation

The proponent is required to complete the following mitigations:

- Carry out a multi-year, follow-up study of environmental effects in the terrestrial environment, as detailed in Section 10.1 (Proposed Studies) of the Project Description;
- The diversity of terrestrial plant and animal species sampled in the study is to be increased;

- Documentation of wildlife and waterfowl fatalities in the mine site including reporting to the Conservation Officer in Faro to arrange for retrieval of the animal; and
- Studies to characterize wildlife travel routes and usage patterns within the Project area carried out.

8.2.4 Air Quality

Activities on the site are currently restricted to care and maintenance of the tailings impoundments and transfer and treatment of water. Air within the project area has the potential to act as a transport mechanism for smoke, dust, and other pollutants which can affect air quality. The emissions and potential for dusting related to the Project are however considered low. There is therefore a low associated likelihood that project components will contribute to significant adverse environmental effects with respect to air quality.

8.3 Effects of Environmental Changes

8.3.1 Traditional Use

The range of traditional use activities that are presently taking place in the Local Study Area include: fishing, wildlife harvesting, and plant resource harvesting. Although, the traditional use activities in the area are reduced from that prior to mine development, it has been determined that the ongoing care and maintenance project will not result in a change of existing opportunities for traditional use.

Specific issues identified by Ross River in its Traditional Use Study Report to the proponent include the following with respect to the environmental assessment of the proposed project:

- Impact of tailings pond and spillway on wildlife;
- Pit security for animals;
- Litter;
- Water quality of creeks and lakes; and
- Access to hunting issues.

In the EAR the proponent outlined in Section 3.4.3 how the issues identified were incorporated into the proposed care and maintenance activities. These are summarized below.

- Proposed care and management activities complement the First Nations' concern regarding the protection of water and fish;
- The proposed terrestrial effects study was driven largely by the First Nations' concern regarding the health of wildlife in the area;
- Maintenance of the ATV crossing of the haul road and security gates will continue to provide safe access to the area above the mine;
- Any proposed new project components are being developed in previously disturbed areas to avoid any new land disturbances; and

- The proposed Water Monitoring Protocol includes sampling for water at the confluence of Rose and Anvil Creeks.

In their review of the EAR, the Ross River Dena First Nation outlined additional concerns regarding the proposed project which was not explicitly dealt with in the EAR. The following provides a summary of these concerns and outlines any relevant mitigation proposed by the proponent.

1. Care and maintenance studies – In addition to the proposed terrestrial effects study, the community referenced the need to incorporate traditional knowledge in the other three proposed studies. In response to this the IR has stated that, although the proposed studies are technical in nature, they will seek out and incorporate traditional knowledge to the extent the study scope permits and ensure the results are circulated to the community through the Technical Advisory Committee (TAC).
2. Monitoring of water quality in North Tributary of FWSD Reservoir (Reservoir Creek) – This location of drinking water supply was identified during the Traditional Use Study. The Interim Receiver is not responsible for the monitoring and assessment of drinking water and as such there is no proposed follow up action.
3. Litter – Barrels and other litter resulting from past exploration activities were identified by the community with in the Local Study Area. The proponent is committed to investigate the location of the barrels, assess their condition and ownership, and the feasibility of removal.

To facilitate the incorporation of traditional knowledge into the proposed care and maintenance studies, it is recommended that the proponent develop a Traditional Knowledge protocol with the First Nation.

8.3.2 Heritage Resources

As described in the EAR, potential effects in relation to heritage resources for the project include unintentional destruction or damage associated with land altering activities and pilfering of moveable artifacts. None of the proposed activities involve alteration of intact or undisturbed land surfaces. The two new activities involving construction (bioremediation cell and landfill) will be located on disturbed land; the rock dumps.

Indirect impact to heritage sites through pilfering and vandalism during the term of the proposed project is possible. The Ross River Dena community has identified gravesites located in the Regional Study Area near Blind Creek and the Pelly River. Since these are located well out of the Local Study Area and any of the proposed site activities, they are not considered to be at risk.

8.3.3 Socio-economic Conditions

The primary concerns with respect to potential effects on socio-economic conditions include:

- Changes to access for traditional and recreational pursuits; and
- Project components and activities that affect traditional and recreational activities.

Based upon the environmental effects assessment, there are no environmental changes that would affect continued commercial, subsistence, or recreational use of the regional area. Potential adverse effects are not anticipated to occur with this project since the Interim Receiver will continue to maintain the present level of access to the mine site for recreational transportation, providing for continued fishing, hunting, and wildlife viewing opportunities, as long as health and safety requirements are met.

8.4 Effects in Relation to Other Factors

8.4.1 Cumulative Environmental Effects

Cumulative effects are changes to the environment caused by an activity in combination with other past, present and reasonably foreseeable future human activities.

Cumulative environmental effects can result from synergistic associations (e.g. chemical A + chemical B = chemical C), additive relationships (e.g. sedimentation from multiple projects being compounded downstream), as well as through the sequestering of areas within a finite landscape (landscape nibbling). A project can also contribute to cumulative socio-economic effects.

In order to gauge the extent of the cumulative impacts stemming from a project, it is necessary to:

- Identify the valued ecosystem and cultural components (VECC's);
- Define the spatial bounds of the assessment (where/ how far away);
- Determine the temporal bounds of the assessment (when);
- Identify other projects that influence environmental components;
- Identify potential cumulative effects;
- Propose mitigation; and
- Determine significance

The temporal scope of this assessment includes the environmental effects of the Project until completion of the proposed care and maintenance project, plus the duration of any adverse environmental effects triggered during that time period.

The spatial scope of this assessment includes the environment (land, water, air) within and adjacent to the project boundaries, and any other area affected through the administration of the project.

Socio-economic and socio-cultural effects stemming from the environmental effects of the Project are considered in the assessment. Any residual effects occurring as a result of the Anvil Range Mine, and not part of the existing care and maintenance, will be considered in this assessment.

8.4.1.1 Past and Present Projects

Due to the relative isolation of the project, very few other projects have existed in the regional study area of the Anvil Range Mine.

No projects occur upstream on any of the nearby rivers or streams. Some secondary roads have been identified in the vicinity of the project, although these are limited in number.

The Town of Faro operates a wetland sewage lagoon adjacent to the town. None of the identified residual effects from this project overlap with the residual effects identified for the Town of Faro wetland sewage lagoon.

Some cabins, residential lots and subdivisions are within the study area for the proposed care and maintenance project. The residual disturbances caused by these developments have been determined to not overlap with any of the residual effects identified for this project.

8.4.1.2 Future Projects

Two foreseeable projects are slated to occur in the future in the local study area for the proposed project. These projects include:

- The decommissioning of the Anvil Range Mine; and
- The construction of a breach in the Fresh Water Supply Dam (FWSD) prior to the 2004 spring freshet.

8.4.1.3 Conclusion

The most likely concern with respect to potentially significant effects related to this project is water quality. Residual effects from the previous operation of the mine are being mitigated in the short-term through the current care and maintenance project, and are therefore not anticipated to contribute any significant effect. Long-term effects of the mine site will be mitigated through site decommissioning. The decommissioning plan for the Anvil Range Mine will be subject to the Yukon Environmental and Socio-Economic Assessment Act (YESAA), and will be required to perform a detailed analysis of potentially significant cumulative effects. Not enough is currently known with respect to the decommissioning of the Anvil Range Mine to include a detailed analysis. Any secondary roads not associated with the Anvil Range Mine occurring in the local environment are subjected to limited usage. These roads have not been identified as significant contributors to sedimentation or other meaningful effects in relation to VECCs.

With respect to the FWSD, engineering analysis indicates that this structure does not provide significant flood attenuation and therefore does not provide appreciable protection to the downstream structures. Therefore the proposed breach of the FWSD does not increase the risk to the downstream structures. The removal of the FWSD eliminates the potential for a "sunny day failure" which would cause the failure of the

Intermediate Dam. Overall the risks to the downstream structures are significantly reduced by removal of the FWSD.

Taking into consideration the limited number of local projects, and the levels of mitigation, both in place and anticipated, the RA concludes that no significant cumulative effects will result as a consequence of this project.

8.4.2 Effects of the Environment on the Project

Due to the difficulty in predicting temporal and spatial occurrence of these types of environmental hazards, mitigation measures typically consist of adaptive management and contingency plans.

The proponent is required to follow mitigations laid out within the adaptive management plan and contingency plan.

Four potential effects of the environment on the project that were evaluated for the purposes of this project include:

- Wind Storms;
- Freshet;
- Floods; and
- Earthquakes.

8.4.2.1 Wind Storm Events

The most likely environmental effect that would potentially result as a consequence of wind storm events is the dispersion of dust and tailings resulting in increasing adverse effects on terrestrial and aquatic environments. A vegetation study of the surrounding area indicated increased levels of metals in vegetation. A follow-up study has been slated to continue with the characterization of metals in surrounding vegetation, and potential effects on terrestrial wildlife. This event has been addressed in the Adaptive Management Plan.

Potential effects are considered minor.

8.4.2.2 Freshet

A freshet is a natural springtime event, generally caused by melting snow and ice, that results in raised water levels in watercourses and lakes. In severe freshet events flooding can occur. This event has been addressed in the contingency plans for Accidents and Malfunctions outlined in the EAR.

Potential effects are considered neutral and short-term (reversible), providing the appropriate contingency plan and response is initiated as required.

8.4.2.3 Flood Events

For the purposes of this assessment, a flood event is considered larger than that which may be experienced with freshet. This would involve a 1:500 year (or greater) flood. This may result in widespread flooding of lands in the study area, and affect specific infrastructure components. It is not likely that an event of this magnitude would occur during the five year term of the proposed licence. Many of the identified infrastructure components have been flood engineered, underscoring the need to maintain the integrity of these components.

The Section 8, Accidents and Malfunctions, outlines monitoring and response scenarios, however, a flood event of catastrophic proportions cannot be predicted or prevented. The proposed contingency and operating procedures provide a necessary plan for a flood event.

8.4.2.4 Earthquakes

Although infrastructure components have a certain level of engineering design built in to prevent serious damage from earthquakes up to a certain magnitude, an earthquake event could result in the weakening or failure of infrastructure depending upon magnitude and duration of the event. It is not likely that an event of this magnitude would occur during the five year term of the proposed licence.

The Accidents and Malfunctions section outlines monitoring and response scenarios, however, an earthquake event of catastrophic proportions cannot be predicted or prevented. The site contingency plans and operating procedures provide a necessary contingency plan for an earthquake.

In addition to the proposed contingency planning for these types of catastrophic events, the effects of such events may be reduced by ensuring that the existing structures are maintained in adequate condition during the care and maintenance period.

Mitigation

The proponent must ensure that the engineered earthen structures at the mine site are maintained to their original design and operational criteria.

8.4.3 Effects of Accidents and Malfunctions

For the purposes of this screening, accidents or malfunctions refer to the breakdown of systems that are necessary components of the project activities and that have the potential to have an adverse environmental effect. The following events have been identified:

- Pipeline breaks within the mine water collection systems;
- Pipeline breaks releasing water to the environment;
- General loss of electrical power;

- Pump failure at a major pumping station;
- Gasoline and diesel fuel spills;
- Loss of road access;
- Loss of communication.

8.4.3.1 Pipeline Breaks within the Mine Water Collection Systems

Some of the water pipelines utilized for the proposed project activities are entirely within the mine water collection systems, and therefore do not pose an environmental risk if break occurs. An operational disruption will occur with such a break. However, repairs can be made by on-site personnel. Such disruptions are anticipated to be relatively minor.

Mitigation

The proponent must ensure that a contingency plan is in place for these pipeline breaks and that repair materials are on hand or readily available from an off-site source, as well as any specialized repair equipment that may be required. A break in any pipeline must be quickly repaired by the operating personnel.

8.4.3.2 Pipeline Breaks Releasing Water to the Environment

The water pipeline from the Vangorda pit to the Grum/Vangorda water treatment plant lies partially outside of the mine water collection systems and therefore poses an environmental risk if a break occurs. This pipeline contains non-compliant water that, in the event of a break, could enter Vangorda Creek. There would also be an operational disruption if this pipeline were to break.

The pipeline was installed in 2001 with contingency planning in mind. The route was selected and extra ditching was excavated to maximize the portion of the pipeline that would pass water back into the Vangorda pit. If a loss of pipeline integrity were to occur, pressure sensors would shut the pump down and quickly shut down the flow.

Mitigation

The proponent is required to ensure that a contingency plan is in place in the event this pipeline breaks, and is to have repair materials on hand or readily available from an off-site source as well as any specialized repair equipment that may be required. Regular inspections are required: daily while operating, weekly otherwise, to ensure integrity of the pipeline and to remove any potential hazards that may arise. The proponent must ensure the continued function of pressure sensors installed in this pipeline that will automatically shut off water flow in the event of a break.

In the event of a pipeline break and non-compliant water flow into Vangorda Creek, a water quality effects monitoring program at downstream monitoring stations is required to determine the extent and duration of contamination.

Communication protocols should be put in place to ensure proper notification to the Town of Faro should such a release occur.

8.4.3.3 General Loss of Electrical Power

A general loss of electrical power would necessitate a shut down of all site operations except those powered by a portable on-site generator, such as the Intermediate Pond lime treatment system and the Little Creek Dam pump. Experience since 1998 has demonstrated that the regional power supplier has restored power quickly, and the contingency plan provides for two alternate power sources in the event of an imminent environmental emergency.

Mitigation

The proponent is required to ensure that a contingency plan is in place in the event of a general loss of power. This plan is to:

- Conduct an operational check of equipment status such that equipment is configured appropriately for restart;
- Contact the regional power supplier to confirm status and ascertain restart timeframe;
- Arrange with the regional power supplier for power to be re-instated to the mine from the Town of Faro diesel generator if an environmental emergency is imminent;
- Undertake maintenance of the on-site emergency generators such that they can be utilized in an environmental emergency situation.

8.4.3.4 Pump Failure at a Major Pumping Station

Pump failure at a major pumping station such as the Main pit, Zone 2 pit, or the Vangorda pit could be caused by loss of power (local or regional), or by mechanical failure.

Mitigation

The proponent is required to ensure that a contingency plan is in place in the event of a pump failure at a major pumping station. This contingency plan must address the need to have a qualified electrician and mechanic employed or available off-site to identify and resolve electrical and mechanical problems. In the extreme event where repairs cannot be made in a timely manner and an environmental emergency is imminent, then a substitute pump must be expedited from an off-site source and installed on an emergency basis.

8.4.3.5 Gasoline and Diesel Fuel Spills

Spills of gasoline and diesel fuel can occur due to operator error, malfunctioning dispensing equipment, overfilling of storage tanks, leaking/damaged storage tanks or leaking/damaged mobile and heavy equipment. Even relatively small spills can have an environmental implication if they occur near a stream or other environmental receptor.

Mitigation

The proponent is required to ensure that a contingency plan is in place in the event of a fuel spill that includes the following:

- Only one storage tank for gasoline and one for diesel fuel are to be utilized;
- The active storage tanks are located within containment berms with capacity to contain the full tank volume (110%);
- The secondary containment berms are to be visually monitored and clean water is removed periodically to maintain storage capacity;
- The storage tanks are registered with Government of Yukon Lands Branch;
- Operating procedures are in place that provide for monitoring of storage tank levels and for security control while dispensing;
- Operator awareness training is provided regarding the environmental implications of spills;
- A spill response kit is maintained at the mine site that includes dry absorbent and floating absorbent booms and pads;
- A spill response plan is in place that provides for notification to site management as well as to the Yukon 24-hour spill reporting office.

In the event of a fuel spill released fully or partially into the water system, a water quality effects monitoring program at downstream monitoring stations is required to determine the extent and duration of contamination. The need for a groundwater monitoring program will be evaluated and a groundwater investigation completed if appropriate.

8.4.3.6 Loss of Road Access

Loss of road access to the mine site may be caused by a flood that erodes a roadway, a washout due to culvert failure, or by heavy snowfall. These events would result in implications in the ability to inspect, repair, and maintain mine facilities.

Mitigation

The proponent is required to implement a contingency plan that includes:

- Park a grader or plow truck in the Town of Faro during winter periods when the road is not being cleared regularly;

- Maintain a grader, plow truck, front end loader, and gravel truck on site or maintain contact with off-site contractors for emergency provision of road repair services;
- Aggressively steam ice from culverts and clear ice from roadside ditches through the winter and spring as required to maintain flow and prevent road washout;
- Maintain contact with the YTG Highways department with regards to joint monitoring, maintenance, and repairs to the access road;

8.4.3.7 Loss of Communication

Loss of communication to the mine site could be caused by the loss of telephone lines from the Town of Faro to the mine site. This may result in a delay in communicating and arranging responses to emergency events.

Mitigation

In the event of long-term loss of communication, the proponent would be required to make other arrangements to maintain communications to the mine site. The proponent is required to ensure a contingency plan is in place with the following guidelines:

- Satellite phones are to be carried by senior site managers and would be used in a general loss of communications;
- The "Guest House" in the Town of Faro is to be equipped with an operable fax machine and telephone.

The proponent has committed to installing a state-of-the-art telephone system at the mine site in 2003.

8.4.3.8 Accidents and Malfunctions of Existing Property Infrastructure

The proponent has prepared contingency measures for the following potential accidents and malfunctions of existing property infrastructure:

- Complete breach of the Faro Creek Diversion;
- Breach of the Rose Creek Diversion Canal into the Intermediate or Cross Valley Ponds;
- Complete breach of the Vangorda Creek Diversion;
- Failure of the Vangorda Creek Haul Road Culvert; and
- Failure of the Intermediate Dam.

The events are potentially of greater environmental consequence but have an extremely low probability of occurring during the care and maintenance period. These contingency plans are documented in Section 8 in the addendum to the EAR submitted by the proponent on June 22, 2003. Their purpose is to manage and minimize, where possible,

the effects of any of these events if they should occur. Staged contingency plans have been put forward for these events consisted of three phases: intermediate, secondary and long-term response. As well, monitoring and management review programs that are in place for each structure.

Many reviewers expressed concern regarding the type of notification that would be provided should such an event occur. This was particularly important for the various downstream users including the Town of Faro, Selkirk First Nation and the Ross River Dena of the Kaska Nation.

Mitigation

In response to these concerns, the proponent must provide, as part of its contingency plan, a communication plan that outlines how the various communities and affected downstream water users will be notified of accidents and malfunctions at the site.

9.0 FOLLOW-UP AND MONITORING

Under EAA, the need for and the requirements of any follow-up program are at the discretion of the RA(s) for screenings. A follow-up program is intended to:

- verify the accuracy of the environmental assessment and the value of recommended mitigation;
- determine effectiveness of mitigation measures and the need for modification of those measures to ensure predictions remain valid;
- identify unexpected environmental problems; and
- implement additional mitigation measures as needed which may derive from both regulatory requirements and from the environmental assessment process.

Deloitte & Touche Inc. provided a proposed Monitoring and Follow-up Program in Section 10, Volume III, of the EAR where the collection of data is recommended to:

- determine unknown existing environmental conditions;
- measure the predicted environmental assessment outcome; and
- measure the effectiveness of the proponent's recommended mitigation measures.

The proponent has also proposed a Monitoring and Protection Program as part of the ongoing care and maintenance (Section 12, Volume II, of the EAR). In addition to these proposed monitoring programs outlined in the EAR, the proponent is required to carry out the following additional programs during the proposed care and maintenance period:

- The results of the proposed AMP monitoring programs should be continually evaluated to ensure the sampling results adequately fulfill the AMP trigger objectives.
- In addition to the proposed surface water, groundwater, sediment, and benthic invertebrate monitoring programs, the proponent is required to continue monitoring activities for fish presence and metal content in fish over the period of this project. This information is required to facilitate the development of the proposed Final Closure and Reclamation plan,

10.0 CONCLUSIONS AND DETERMINATION OF THE RESPONSIBLE AUTHORITY

It is the determination of the Responsible Authority(s) that taking into account the implementation of mitigation measures, the project is not likely to cause significant adverse environmental effects.

Environmental Assessment Act determination:

16(1)(a):
"...where, taking into account the implementation of any mitigation measures that the responsible authority considers appropriate, the project is not likely to cause significant adverse environmental effects, the responsible authority may exercise any power or perform any duty or function that would permit the project to be carried out and shall ensure that any mitigation measures that the responsible authority considers appropriate are implemented."

Prepared by:

September 25, 2003

Leslie Gomm
Project Manager
Environmental Assessment Unit
Government of Yukon

Date

Authorization:

September 25 2003

Micheal McBride
Director, DAP Unit
Executive Council Office
Government of Yukon

Date

References

CCME (Canadian Council of Ministers of the Environment), Canadian Environmental Quality Guidelines, Environment Canada Guidelines and Standards Division, 1999 (with 2002 updates).

Curragh Resources, Water Recycle and Tailings Depositions Plan, Kilborn Report 350928, June 1991.

Curragh Resources, Water Long Range Plan Development Plan, March 1987.

Curragh Resources, Down Valley Tailings Impoundment Decommissioning Plan, SRK Report 60635, July 1993.

Deloitte and Touche Inc., Project Description Supplement for Anvil Range Mining Corporation (Interim Receivership) Water Licence Renewal, 18 September 2002.

Deloitte and Touche Inc., letter from Shannon Glenn to Leslie Gomm, Re: Water Licence Renewal CEAA Process – Comments on the Draft Guidelines, 6 March 2003.

Deloitte and Touche Inc., Anvil Range Mining Corporation (Interim Receivership) Water Licence Renewal- Environmental Assessment Report, 28 April 2003.

Deloitte and Touche Inc., letter to Leslie Gomm, Re: Anvil Range Mining Corporation Follow up to May 13 2003 EAR Meeting, including EAR Addendum to AMP and Accidents and Malfunctions Sections, 22 June 2003.

Deloitte and Touche Inc., letter to Leslie Gomm, *Re: Anvil Range Mining Corporation (" Anvil Range")*, including clarification regarding concerns raised by Ross River Dena Council, 22 July 2003.

Deloitte and Touche Inc., letter to Leslie Gomm, Re: Anvil Range Mining Corporation (" Anvil Range") – Response to August 12 2003 Draft Screening), 27 August 2003.

Deloitte and Touche Inc., letter to Leslie Gomm, Re: Anvil Range Mining Corporation (" Anvil Range") – Editorial Comments to the August 12 2003 Draft Screening), 27 August 2003.

DIAND Environment Directorate, Draft Information Guidelines for the preparation of an Environmental Assessment Report for Anvil Range

Mining Corporation – Interim Receivership Water Licence Renewal, 13 February 2003.

DIAND Environment Directorate, memo to file from Leslie Gomm, Re: Meeting in Ross River – February 25, 2003 – Faro Relicencing, summarizing meeting regarding Draft EAR guidelines with members of Ross River Dena Council and Selkirk First Nation, 27 February 2003.

DIAND Environment Directorate, Information Guidelines for the preparation of an Environmental Assessment Report for Anvil Range Mining Corporation – Interim Receivership Water Licence Renewal, 11 March 2003.

DIAND Ross River RMO letter from Doug Bishop to Leslie Gomm, Re: Review of Anvil Range Mining Complex Project Description, 25 July 2002.

DIAND Ross River RMO letter from Doug Bishop to Leslie Gomm, Re: Review of Anvil Range Mining Complex Draft EAR Guidelines, 20 February 2003.

DIAND Water Resources, letter from Bill Slater to Leslie Gomm, Re: Faro Mine, Deloitte and Touche/Anvil Range Mining Corp., Project Description, 13 August 2002.

DIAND Water Resources, email from Bill Slater to Leslie Gomm, Re: Faro Guidelines, 10 March 2003.

DIAND Type II Office, comments from Dave Sherstone on the YERC Draft Screening Report, 21 August 2003.

Environmental Protection, Environment Canada letter from Benoit Godin to Leslie Gomm, Re: Canadian Environmental Assessment Act Review of Anvil Range Mining Corporation – Interim Receivership Water Licence Renewal, 8 August 2002.

Environmental Protection, Environment Canada letter from Benoit Godin to Leslie Gomm, Re: Deloitte and Touche Supplemental Information – Project Description - Comments, 15 October 2002.

Environmental Protection, Environment Canada email from Benoit Godin to Leslie Gomm, Re: Draft EAR Guidelines for Faro, 10 February 2003.

Environmental Protection, Environment Canada email from Benoit Godin to Leslie Gomm, *Re:* Review of the Anvil Range Mining Complex - Draft Guidelines, 10 March 2003.

Environmental Protection, Environment Canada email from Benoit Godin to Leslie Gomm, Re: Anvil Range Mining Complex – 2004-2008 Water Licence Renewal – Environmental Assessment Report, 30 May 2003.

Fisheries and Oceans Canada, letter Sandra Orban to Leslie Gomm, Re: Faro Mine Site Water Licence Renewal, Faro Yukon, 5 September 2002.

Fisheries and Oceans Canada, email from Steve Gotch to Leslie Gomm, Re:Anvil Range EAR Guideline, 4 February 2003.

Fisheries and Oceans Canada, letter from Al Von Finster to Leslie Gomm, Re: Anvil Range Mine Complex – 2004- 2008 Water Licence Renewal – Environmental Assessment Report, 31 May 2003.

Government of Yukon, Yukon's Environmental Assessment Act Practitioners' Guide, 2003.

Government of Yukon and DIAND Type II Project Office, Anvil Range Mine Complex Closure Planning Project Management, June 2003.

Government of Yukon, Environmental Assessment Unit, memo to file from Leslie Gomm, Re: Meeting Notes with Dave Power, Town of Faro, CAO – Anvil Range Water Licence Renewal EAR, summarizing communities concerns regarding the EAR, 27 May 2003.

Government of Yukon, Environmental Assessment Unit, Draft Screening Report on the Anvil Range Mining Complex Water Licence Renewal (2004 – 2008), for YERC distribution, 12 August 2003.

Government of Yukon, Environmental Assessment Unit, Draft Screening Report on the Anvil Range Mining Complex Water Licence Renewal (2004 – 2008), for public distribution, 3 September 2003.

Government of Yukon, Department of Environment letter from Jon Bowen to Leslie Gomm, Re: Review of Anvil Range Mining Complex Project Description, 29 July 2002.

Government of Yukon, Department of Environment letter from Jon Bowen to Leslie Gomm, Re: Review of Anvil Range Mining Complex Draft EAR Guidelines, 5 March 2003.

Government of Yukon, Department of Environment letter from Jon Bowen to Leslie Gomm, Re: Review of EAR for the Anvil Range Mining Complex 2004 – 2008 Water Licence, 29 May 2003.

Government of Yukon, Department of Environment letter from Jon Bowen to Leslie Gomm, Re: YERC Review of Draft Screening Report for the Anvil Range Mining Complex 2004 – 2008 Water Licence Renewal, 25 August 2003.

Government of Yukon, Department of Environment Water Resources Branch, letter from Bill Slater to Leslie Gomm, Re: Anvil Range Mining Complex Environmental Assessment Report, 30 May 2003.

Government of Yukon, Energy Mines and Resources to Leslie Gomm, Re: Review of the Anvil Range Mine Complex Project Description, 9 August 2002.

Government of Yukon, Energy Mines and Resources, letter from Marg Crombie to Leslie Gomm, Re: Review of the Anvil Range Mine Complex Draft EAR Guidelines, 5 March 2003.

Government of Yukon, Energy Mines and Resources, email from Kirstie Simpson to Leslie Gomm, Re: Review of the Faro/Anvil Range Mine Complex 2004 – 2008 Water Licence Renewal EA Report, 12 June 2003.

Government of Yukon, Health and Social Services from Todd Pinkas to Leslie Gomm, Re: Anvil Range Mine, 24 September 2003.

Government of Yukon, Heritage Branch letter from Ruth Gotthardt to Leslie Gomm, Re: Review of Anvil Range Mine Complex Draft EAR Guidelines, 4 March 2003.

Government of Yukon, Heritage Branch e-mail from Ruth Gotthardt to Leslie Gomm, Re: Anvil Range Mine Complex – Project Description, 31 July 2002.

Government of Yukon, Heritage Branch e-mail from Ruth Gotthardt to Leslie Gomm, Re: RERC Review of the Environmental Assessment Report for the Anvil Range Mine Complex, 2 May 2003.

Mike Phillips, letter to Environmental Assessment Unit, RE: Anvil Range Water Licence Admendment/Renewal (2004 – 2008), 12 May 2003.

Natural Resources Canada letter, from Iannick Lamirande to Leslie Gomm, RE: Anvil Range Mining Corporation – Interim Receivership Water Licence Renewal, 9 September 2002.

Northern Reclamation Solutions Inc, letter to Environmental Assessment Unit, RE: Anvil Range Water Licence Renewal Project, 29 May 2003.

Ross River Dena Council, letter from Chief Jack Caesar to Leslie Gomm, Re: Deloitte and Touche, in its capacity as Interim Receiver of Anvil Range Mining Corporation – Environmental Assess related to the Renewal of the Mine Site Water Licence, with attached Non-Technical Review of Project Description and Project Description Supplement and Review of Anvil Range Mining Corporation – Interim Receivership Project Description *(technical review)* prepared by SNC-Lavalin, 20 November 2002.

Ross River Dena Council, Summary Report of the Review of the EAR for the Faro Mine Water Licence Application by the Ross River Dena Council, 6 June 2003.

Ross River Dena Council, letter from Testloa G. Smith to Leslie Gomm, submission on behalf of Kaska Nation on the Draft Screening Report, 23 September 2003.

Town of Faro, Letter from Dave Power to Leslie Gomm, Re: Draft Screening Report on the Anvil Range Mine Complex Water Licence Renewal (2004 – 2008), 23 September 2003.

Yukon Conservation Society, letter from Sue Moodie to Leslie Gomm, Re: YERC Review of Draft Screening Report for the Anvil Range Mine Complex 2004 – 2008 Water Licence Renewal, 20 August 2003.

Yukon Salmon Committee, letter from Lorelei Smith to Leslie Gomm, Re: YERC Review of Draft Screening Report for the Anvil Range Mine Complex 2004 – 2008 Water Licence Renewal, 25 August 2003.

APPENDIX A – Summary of Proposed Care and Maintenance Program

Summary of Proposed Care and Maintenance Activities

Location	Physical Works or Activity	Class (Monitoring, Mtce, Action)	Timing	Rationale	Current Licence Requirement	EAR Reference
Grum Pit	Monitor water elevation	Monitoring	ongoing	Ensure water elevation does not rise above desired range	N	5.3.1.4
Grum Pit	Monitor water quality	Monitoring	quarterly	To determine water treatment requirement	Y	5.3.1.4
Little Creek Dam	Geotechnical monitoring	Monitoring	Annual inspection by professional engineer; Semi-annual reading of instrumentation	Assess performance	Y	5.3.2.1
Vangorda Rock Dump seepage	Groundwater quality monitoring	Monitoring	Semi-annual spring and fall	Assess seepage water quality	N	5.3.2.2
Grum Creek	Ongoing surface and groundwater quality monitoring	Monitoring	Surface - quarterly and annual during freshet; groundwater - semi-annual spring and fall	Assess seepage water quality	Y	5.3.2.3
Grum and Vangorda Rock Dumps	Geotechnical monitoring	Monitoring	Annual inspection by professional engineer; Semi-annual reading of instrumentation	Assess stability	Y	5.3.2.4
Grum Overburden Dump	Monitor erosion potential	Monitoring	ongoing	Assess potential sediment sources into Sheep Pad Pond	N	5.3.2.5
Grum Ore Transfer Pad	Surface water quality monitoring (V17A)	Monitoring	quarterly	Assess seepage water quality	N	5.3.2.6
Grum Interceptor Ditch	Monitor erosion potential	Monitoring	ongoing	Assess potential sediment sources into Sheep Pad Pond	N	5.3.3
Vangorda Creek Diversion	Geotechnical monitoring	Monitoring	Annual inspection by professional engineer	Assess stability	Y	5.3.4.1
Vangorda Creek Diversion	Surface water quality monitoring (V1)	Monitoring	quarterly	Receiving environment - reference monitoring	Y	5.3.4.1
Vangorda Creek Diversion	Monitor stream sediment quality and benthic community monitoring (V1)	Monitoring	2005, 2007	Receiving environment - reference monitoring	Y	5.3.4.1
Main Stem Vangorda Creek	Surface water quality monitoring (V27)	Monitoring	spring, summer, fall	Receiving environment monitoring	Y	5.3.4.2
Main Stem Vangorda Creek	Monitor stream sediment quality and benthic community (V27)	Monitoring	2005, 2007	Receiving environment monitoring	Y	5.3.4.2
AEX Creek	Surface water quality monitoring (V6A)	Monitoring	Quarterly	Receiving environment monitoring	Y	5.3.4.3
Haul Road	Monitor haul road drainage	Monitoring	ongoing	Assess potential sediment sources into creeks	N	5.3.4.4
West Fork Vangorda Creek	Surface water quality monitoring (V5)	Monitoring	quarterly	Receiving environment monitoring	Y	5.3.4.5
West Fork Vangorda Creek	Monitor stream sediment quality and benthic community (V5)	Monitoring	2005, 2007	Receiving environment monitoring	Y	5.3.4.5
Lower Vangorda Creek	Monitor flow	Monitoring	Continuous	Water balance	N	5.3.4.6
Lower Vangorda Creek	Surface water quality monitoring (V8)	Monitoring	quarterly	Receiving environment monitoring	Y	5.3.4.6
Lower Vangorda Creek	Monitor stream sediment quality and benthic community (V8)	Monitoring	2005, 2007	Receiving environment monitoring	Y	5.3.4.6
Vangorda Pit	Associated maintenance	Mtce	As required	Ensure performance	N	5.3.1.1
Water treatment system	Associated maintenance	Mtce	As required	Ensure performance	N	5.3.1.2
Little Creek Dam	Maintenance	Mtce	As required	Ensure performance	Y	5.3.2.1
Vangorda Creek Diversion	Maintain diversion channel	Mtce	As required	Ensure performance	Y	5.3.4.1
Haul Road	Maintain haul road drainage	Mtce	As required	Prevent sediment load into creek	N	5.3.4.4
Mine Access Road	maintenance	Mtce	As required	Ensure performance	N	5.4
Mine access points	restrict public access to potentially unsafe areas	Action	Continuous	Ensure public safety	N	5.4
Haul Road	maintenance	Mtce	As required	Ensure performance	N	5.4

Summary of Proposed Care and Maintenance Activities

Location	Physical Works or Activity	Class (Monitoring, Mtce, Action)	Timing	Rationale	Current Licence Requirement	EAR Reference
South Fork Rose Creek	Bridge and culvert monitoring	Monitoring	ongoing	Assess performance	N	5.2.6.2
South Fork Rose Creek	Monitor haul road drainage	Monitoring	ongoing	Assess potential sediment sources into creeks	N	5.2.6.2
South Fork Rose Creek	Benthic community monitoring (R1)	Monitoring	2004, 2006, 2008	Receiving environment monitoring	Y	5.2.6.2
Pumphouse Pond	Monitor spillway	Monitoring	ongoing	Assess performance	Y	5.2.6.3
Rose Creek Diversion Canal	Geotechnical monitoring	Monitoring	Annual inspection by professional engineer, Semi-annual reading of instrumentation	Assess performance	Y	5.2.6.4
Rose Creek downstream of Mine Facilities	Continuous flow monitoring	Monitoring	Continuous	Water balance requirement	N	5.2.6.5
Rose Creek downstream of Mine Facilities	Benthic community monitoring (R2, R3, R4)	Monitoring	2004, 2006, 2008	Receiving environment monitoring	Y	5.2.6.5
Rose Creek downstream of Mine Facilities	Surface water quality monitoring	Monitoring	semi-annual to monthly, depending on site	Receiving environment monitoring	N	5.2.6.5
Anvil Creek	Surface water quality monitoring (R5, R6)	Monitoring	2004, 2006, 2008	Receiving environment monitoring	Y	5.2.6.6
Anvil Creek	Benthic community monitoring (R5, R6)	Monitoring	2004, 2006, 2008	Receiving environment monitoring	Y	5.2.6.6
Zone 2 Pit	Associated maintenance	Mtce	As required	Ensure performance	Y	5.2.1.1
Main Pit	Associated maintenance	Mtce	As required	Ensure performance	N	5.2.1.2
Mill Water Treatment System	Associated maintenance	Mtce	As required	Ensure performance	N	5.2.1.4
Mill Water Treatment System	System improvements	Mtce	Opportunistic	Improved performance	N	5.2.1.4
Plant Site seepage to Rose Creek Tailings Facility	Maintenance of surface water control ditches	Mtce	As required	Ensure performance	N	5.2.3
Intermediate and Cross Valley Dams	Maintenance	Mtce	As required	Ensure performance	Y	5.2.4.3
Original and Second Tailings Impoundments and Dams	Maintenance of Second Impoundment Dam	Mtce	As required	Maintain road access	Y	5.2.4.4
North Wall Interceptor Ditch	Maintenance	Mtce	As required	Ensure performance	Y	5.2.4.6
Faro Creek Diversion	Maintain diversion channel	Mtce	As required	Ensure performance	Y	5.2.5.1
North Fork Rose Creek	Rock drain maintenance	Mtce	As required	Ensure performance	Y	5.2.6.1
South Fork Rose Creek	Bridge and culvert maintenance	Mtce	As required	Ensure performance	N	5.2.6.2
South Fork Rose Creek	Maintain haul road drainage	Mtce	As required	Prevent sediment load into creek	N	5.2.6.2
Pumphouse Pond	Spillway maintenance	Mtce	As required	Ensure performance	Y	5.2.6.3
Rose Creek Diversion Canal	maintenance	Mtce	As required	Ensure performance	Y	5.2.6.4
Vangorda Pit	Dewatering to Grum/Vangorda Water Treatment Plant	Action	Summer - 1 month (typically)	Water is non-compliant - metal leaching from developed areas and pit walls	N	5.3.1.1
Water treatment system	Treat water pumped from Vangorda Pit and discharge to Grum Interceptor Ditch	Action	Summer - 1 month (typically)	Achieve compliance with water licence	Y	5.3.1.2
Water treatment system	Sludge disposal into Vangorda Pit	Action	As required	Ensure performance; secure storage and established practice	N	5.3.1.3
Little Creek Dam	Dewatering to Vangorda Pit	Action	Summer - intermittently	Water is non-compliant - metal leaching from Vangorda Rock Dump	N	5.3.2.1
Vangorda Pit	Monitor water elevation	Monitoring	ongoing	Ensure water elevation does not rise above desired range	N	5.3.1.1

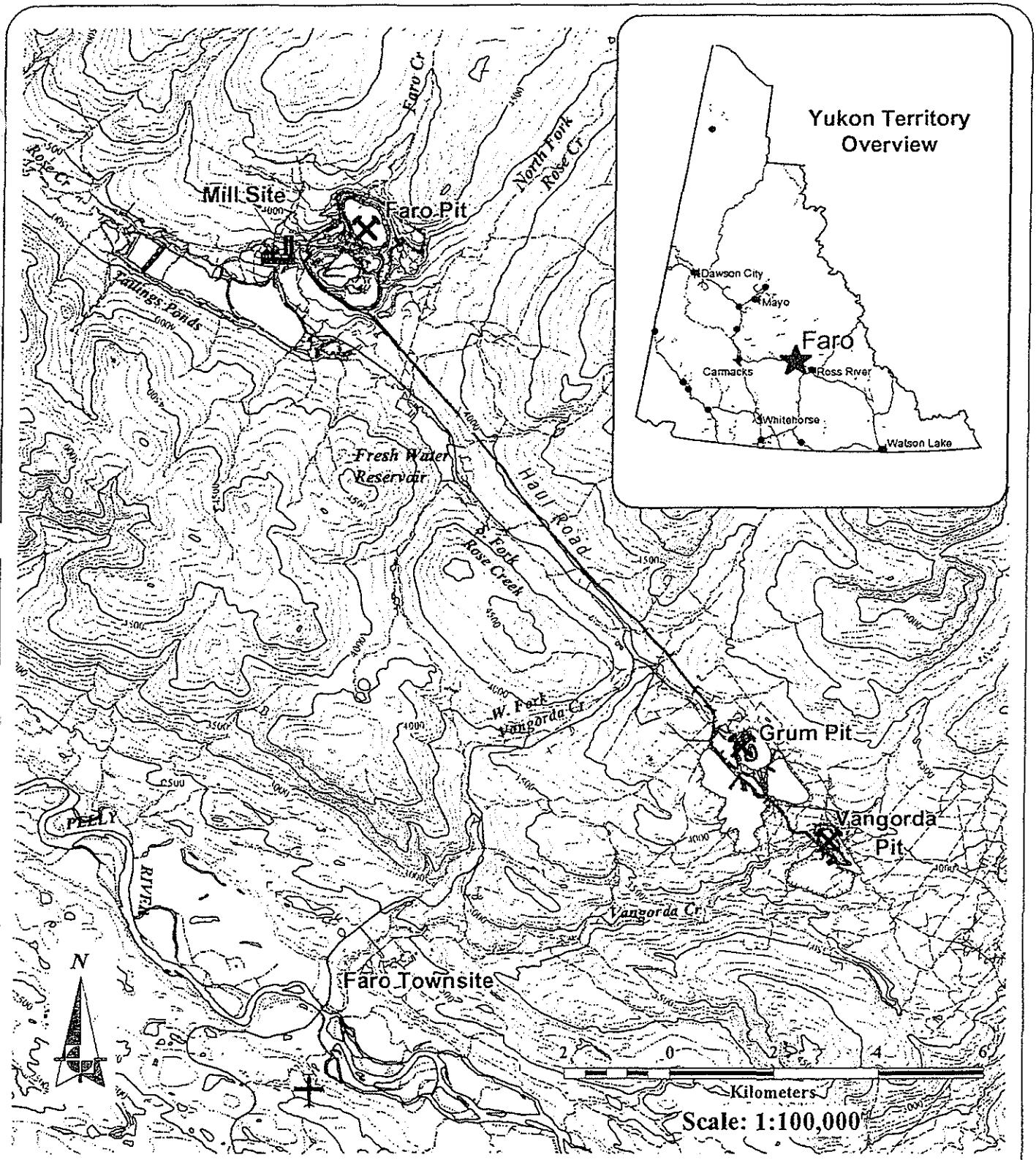
Summary of Proposed Care and Maintenance Activities

Location	Physical Works or Activity	Class (Monitoring, Mtce, Action)	Timing	Rationale	Current Licence Requirement	EAR Reference
Zone 2 Pit	Dewatering into Faro Main Pit	Action	Summer - intermittently	Water is non-compliant - metal leaching from rock dumps and pit walls	Y	5.2.1.1
Main Pit	Dewatering to Mill Water Treatment Plant	Action	Summer - 3 months (typically)	Water is non-compliant - metal leaching from rock dumps and pit walls	N	5.2.1.2
Mill Water Treatment System	Treat water pumped from Faro Main Pit and discharge to Rose Creek, Cross-Valley Pond or Intermediate Pond	Action	Summer - 3 months (typically)	Achieve compliance with water licence	N	5.2.1.3
Mill Water Treatment System	Sludge disposal into Intermediate Pond	Action	As required	Ensure performance; secure storage and established practice	N	5.2.1.4
Intermediate and Cross Valley Ponds seepage	Lime treatment of water from the Intermediate Pond and discharge to Cross Valley Pond	Action	Summer - intermittently	Achieve compliance with water licence	Y	5.2.4.1
Intermediate and Cross Valley Ponds seepage	Release of water from Cross Valley Pond to Rose Creek	Action	Summer - intermittently	Achieve compliance with water licence	Y	5.2.4.1
Intermediate and oss Valley Ponds seepage	Sludge disposal into Intermediate Pond	Action	As required	Ensure performance; secure storage and established practice	N	5.2.4.2
Main Pit	Monitor water elevation	Monitoring	ongoing	Ensure water elevation does not rise above desired range	Y	5.2.1.2
Rock Dump seepage to North Fork Rose Creek	Ongoing surface and groundwater water quality monitoring	Monitoring	Surface - Annual during freshet; groundwater - semi-annual spring and fall	Assess seepage water quality	Y	5.2.2.1
Rock Dump seepage to Rose Creek Tailings Facility	Ongoing surface and groundwater water quality monitoring	Monitoring	Surface - Annual during freshet; groundwater - semi-annual spring and fall	Assess seepage water quality	Y	5.2.2.2
Rock Dump seepage to Upper Guardhouse Creek	Ongoing surface water quality monitoring	Monitoring	Annual during freshet	Assess seepage water quality	Y	5.2.2.3
Plant Site seepage to Rose Creek Tailings Facility	Surface water quality monitoring	Monitoring	Annual during freshet	Assess seepage water quality	Y	5.2.3
Intermediate and Cross Valley Ponds seepage	Monitor discharge volume and water level in ponds	Monitoring	discharge - during release; water levels - weekly	Water balance requirement	Y	5.2.4.1
Intermediate and ross Valley Dams	Geotechnical monitoring	Monitoring	Annual inspection by professional engineer; Semi-annual reading of instrumentation	Assess performance	Y	5.2.4.3
Intermediate and Cross Valley Dams	Monitor seepage flow from Cross Valley Dam	Monitoring	Monthly	Assess stability of dam	Y	5.2.4.3
Tailings Impoundment	Investigation of source areas of contamination, pathways and impact on terrestrial environmental receptors	Monitoring	2003 to 2005; mitigation report by end 2005	To identify source areas, pathways and receptor impacts	N	5.2.4.5
Rose Creek Valley Aquifer	Groundwater quality monitoring	Monitoring	Semi-annual (spring and fall)	Assess seepage water quality	Y	5.2.4.7
Main Pit Northeast Wall	Monitor Pit Wall stability	Monitoring	As required	Assess stability with respect to integrity of diversion channel	N	5.2.5.2
North Fork Rose Creek	Surface water quality monitoring (R7)	Monitoring	Quarterly	Trigger for contingency	N	5.2.6.1
North Fork Rose Creek	Benthic community monitoring (R7)	Monitoring	2004, 2006, 2008	Receiving environment - reference monitoring	Y	5.2.6.1
North Fork Rose Creek	Continuous flow monitoring	Monitoring	Continuous	Water balance requirement	N	5.2.6.1
lorth Fork Rose Creek	Rock drain performance monitoring at haul road	Monitoring	Monthly	Assess performance	Y	5.2.6.1

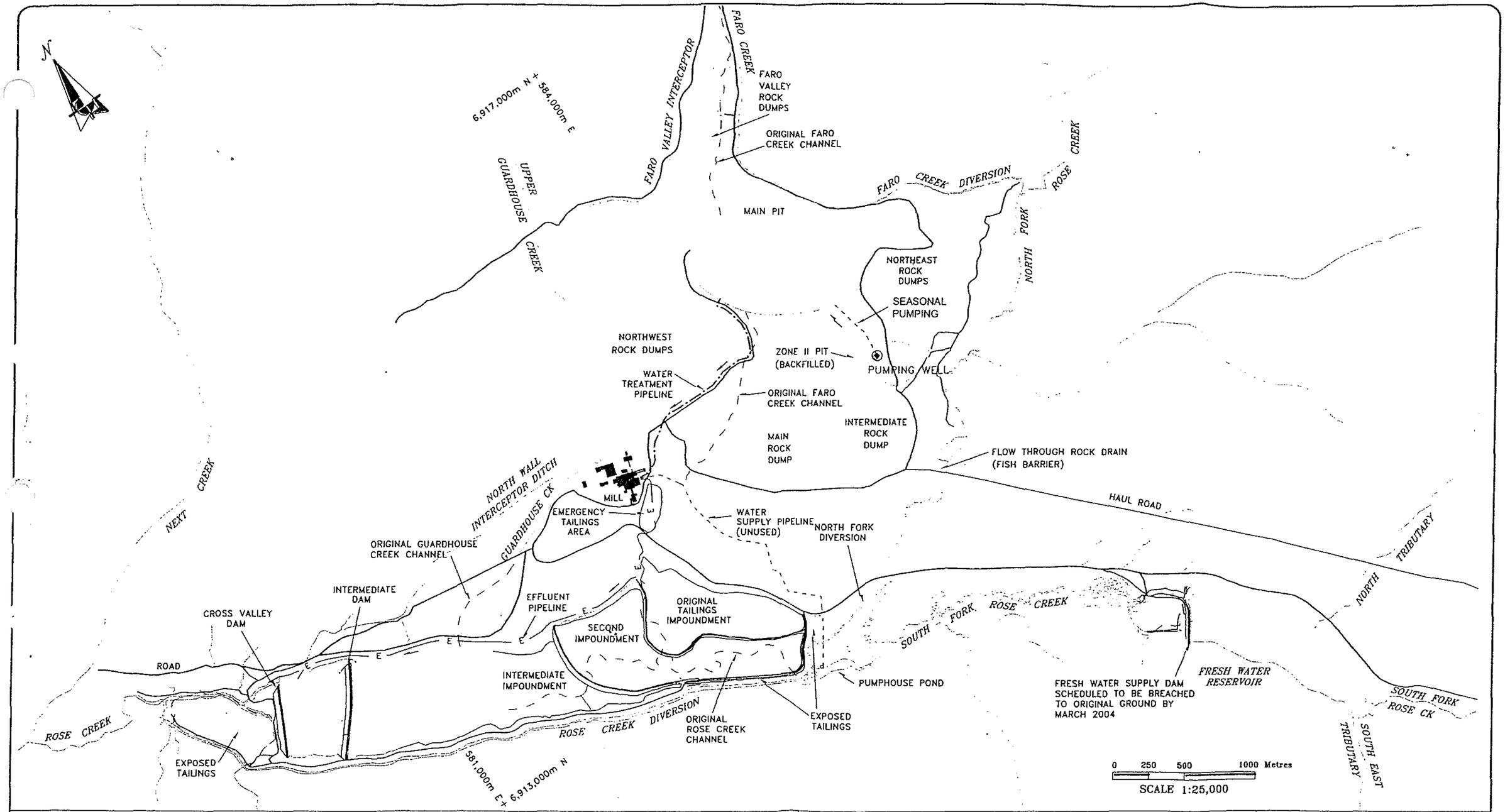
Summary of Proposed Care and Maintenance Activities

Location	Physical Works or Activity	Class (Monitoring, Mtce, Action)	Timing	Rationale	Current Licence Requirement	EAR Reference
Haul Road	Maintain ATV access ramp	Mtce	As required	Provide controlled public passage	N	5.4
Mine Sites	Provide safe transortation and storage for materials	Action	As required	Environmental protection, public health, protection of assets	N	5.5
Mine Sites	Securing and safely storing highly contaminated soils	Action	As required	Progressive reclamation - Environmental protection	N	5.6
Mine Sites	Removal of buildings that represent a health or safety hazard and placement in existing landfill	Action	As required	Progressive reclamation - Public safety	N	5.6
Mine Sites	Materials salvage	Action	As required	Progressive reclamation - Asset management	N	5.6
Faro/Vangorda Plateau	Tear down / demolition of buildings	Action	2004 - 2008	progressive reclamation	N	6.1
Demolition Waste Landfill	Site establishment - excavate surface water control ditches	Action	2004 - 2008	disposal of demolition debris from bulding tear down	N	6.1
Demolition Waste Landfill	Site operations	Action	2004 - 2008	disposal of demolition debris from bulding tear down	N	6.1
Bioremediation Cell	Site establishment - berm and liner	Action	2004 - 2008	remediaiton of hydrocarbon contaminated soil	N	6.2
Bioremediation Cell	Site operations - place soil and operate	Action	2004 - 2008	remediaiton of hydrocarbon contaminated soil	N	6.2
Oxidized fines near the Crusher Stockpile	Consolidate and cover with compacted silt or clay	Action	2004	Reduces water treatment requirements; human and environmental protection	N	6.3.3
Oxidized fines near the Vangorda Rock Dump	Cover with compacted silt or clay	Action	2004	Reduces water treatment requirements; human and environmental protection	N	6.3.4

APPENDIX B – Figures



Site Name: FARO File : 22307-D6-V2-FIG1.PDF Gartner Lee Limited Scale: 1: 100,000	DELOITTE & TOUCHE INC. **Project Location Map**	Project No: 22-307 Date Issued: April. 2003 Volume 2 **Figure 1**



LEGEND:

- ROADS
- EXISTING SURFACE DRAINAGE
- PRE-MINE DRAINAGE
- E — EFFLUENT PIPELINE
- PIPELINE
- WATER TREATMENT PIPELINE
- SURFACE WATER

SOURCES OF INFORMATION:

1. DIGITAL COPY OF 1:50,000 TOPOGRAPHIC MAP SUPPLIED BY SRK CONSULTING.
2. MAP COORDINATES ARE UTM NAD83 ZONE 8; CONTOUR INTERVAL 100 FT.
3. FARO MINE DETAILS ADAPTED FROM DRAWINGS BY ROBERTSON GEOCONSULTANTS INC.

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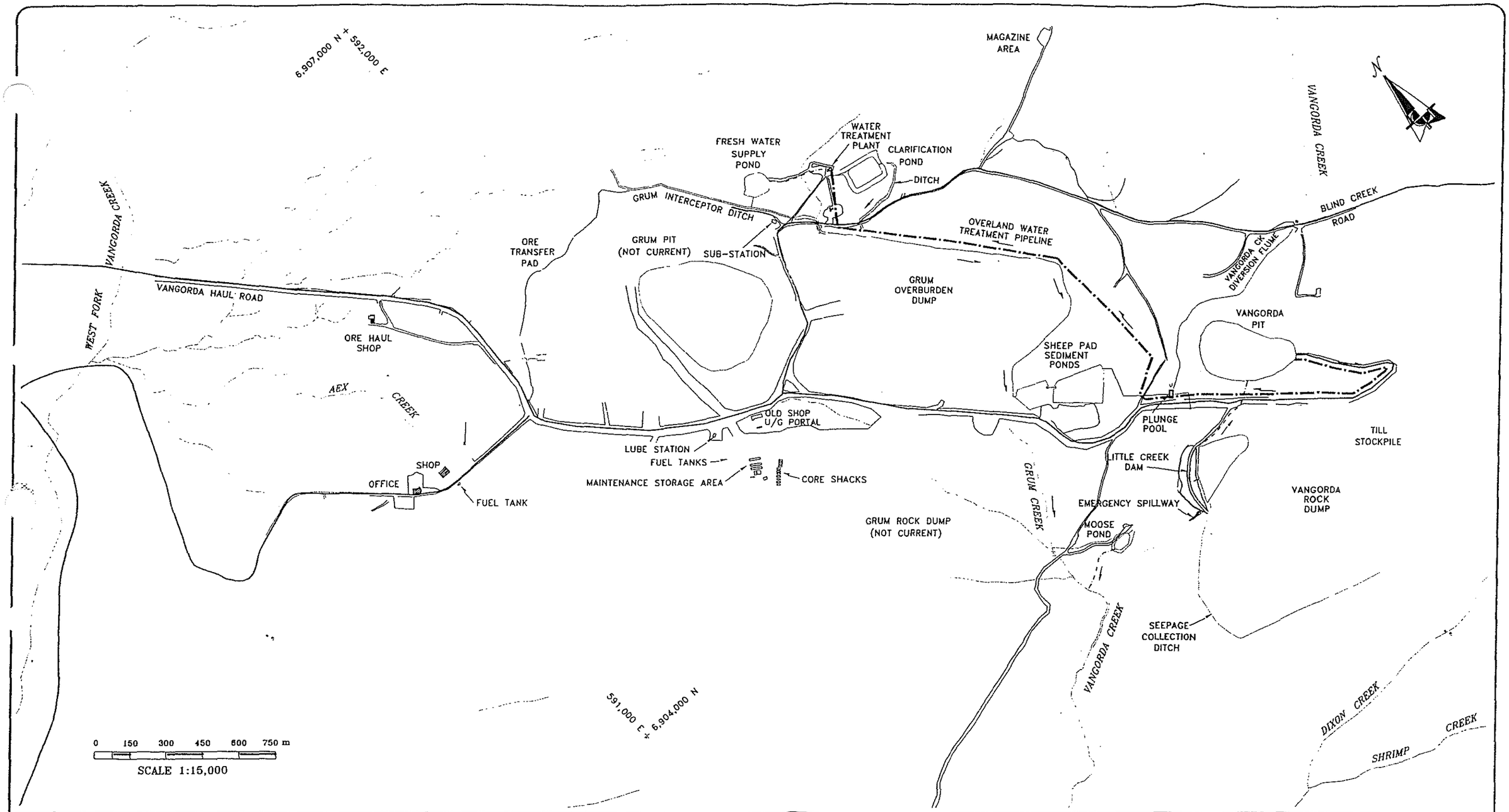
ANVIL RANGE MINING CORPORTATION
(INTERIM RECEIVER)
2004 TO 2008 WATER LICENCE RENEWAL
ENVIRONMENTAL ASSESSMENT REPORT

FARO MINE SITE OVERVIEW

Gartner Lee | Deloitte & Touche | VOLUME 1 FIGURE NO. 2

Screening Report - Sept 25/03
FIGURE 2



LEGEND:

- ROADS
- EXISTING SURFACE DRAINAGE
- PRE-MINE DRAINAGE
- EFFLUENT PIPELINE
- PIPELINE
- WATER TREATMENT PIPELINE
- SURFACE WATER

SOURCES OF INFORMATION:

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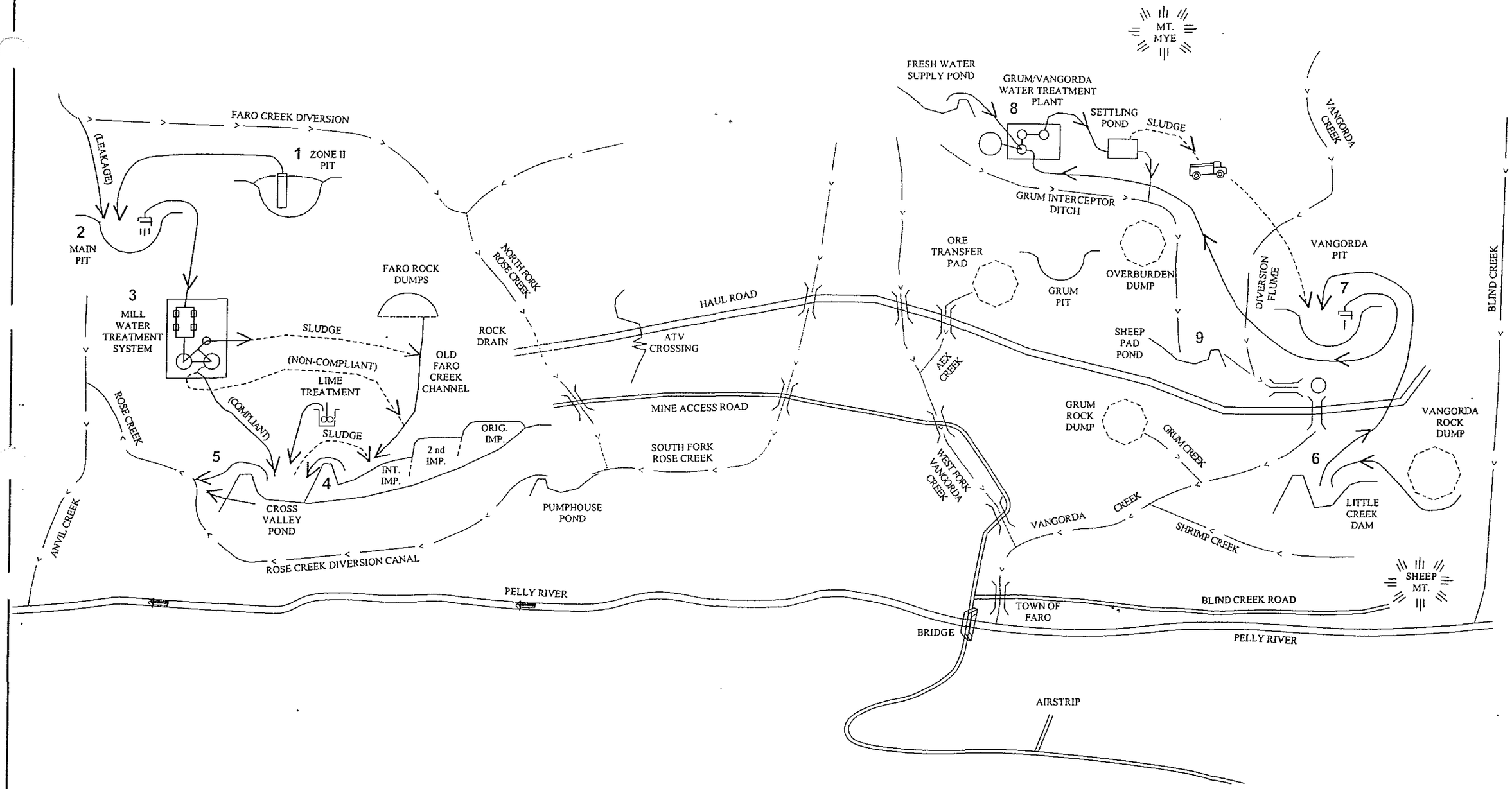
ANVIL RANGE MINING CORPORATION
(INTERIM RECEIVER)
2004 TO 2008 WATER LICENCE RENEWAL
ENVIRONMENTAL ASSESSMENT REPORT

VANGORDA PLATEAU MINE SITE OVERVIEW

Gartner Lee | Deloitte & Touche | VOLUME 1 FIGURE NO. 3

Screening Report - Sept 25/03
FIGURE 3



PROPOSED ACTIVITIES:

1 PUMP ZONE II PIT
2 PUMP MAIN PIT
3 MILL WATER TREATMENT SYSTEM
4 INTERMEDIATE POND LIME TREATMENT
5 DISCHARGE WATER TO ROSE CREEK
6 PUMP LITTLE CREEK DAM
7 PUMP VANGORDA PIT
8 GRUM/VANGORDA WATER TREATMENT PLANT
9 DISCHARGE WATER TO VANGORDA CREEK

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ANVIL RANGE MINING CORPORATION
(INTERIM RECEIVER)
2004 TO 2008 WATER LICENCE RENEWAL
ENVIRONMENTAL ASSESSMENT REPORT

SUMMARY OF PROPOSED CARE AND MAINTENANCE ACTIVITIES
FARO AND VANGORDA PLATEAU SITES

Gartner Lee | Deloitte & Touche | VOLUME 1 FIGURE NO. 17

Screening Report - Sept 25/03
FIGURE 4

APPENDIX C – RERC/YERC Distribution List

YERC - ANVIL RANGE PROJECT
SCREENING REPORT DISTRIBUTION LIST

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Michael McBride Director Development Assessment Unit ECO – Yukon Government **DAP** PO Box 2703 Whitehorse, Yukon Y1A 2C6 Tel: (867) 393-6431 Fax: (867-393-6438 e-mail: Michael.mcbride@gov.yk.ca	Ryan Parry Environmental Assessment Unit ECO – Yukon Government **A310** PO Box 2703 Whitehorse, YT Y1A 2C6 Tel: (867) 456-3876 Fax: (867) 667-3216 e-mail: ryan.parry@gov.yk.ca	Marg White Manager, Land Use Energy Mines & Resources Yukon Government **K320** PO Box 2703 Whitehorse, YT Y1A 2C6 Tel: (867) 667-3173 Fax: (867) 667-3214 e-mail: marg.white@gov.yk.ca
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Carl S. Alleyne, Ph.D. Regional Environmental Assessment Coordinator Healthy Environments & Consumer Safety Branch 3155 Willingdon Green Vancouver, BC V5G 4P2 Tel: (604) 666-4693 Fax: (604) 666-3149 e-mail: Carl_Alleyne@hc-sc.gc.ca	Mike Walton Parks Canada Agency 205 - 300 Main Street Whitehorse, Yukon Y1A 2B5 Tel: (867) 667-3824 Fax: (867) 393-6701 e-mail: mike_walton@pch.gc.ca	Natural Resources Canada Environmental Assessment Officer 580 Booth Street #3-3C6 Ottawa, ON K1A 0E4 Tel: (613) 996-0055 Fax: (613) 995-5719 email: ilamiran@nrcan.gc.ca
Colin Parkinson Navigable Waters Protection Officer 350-555 West Hastings Street Vancouver, BC V6B 5G3 Tel: (604) 775-8868 Fax: (604) 775-8828 e-mail: parkinsonc@pac.dfo-mpo.gc.ca	Paul Scott Canadian Environmental Assessment Agency Suite 320, Sinclair Centre 757 West Hastings Street Vancouver, BC V6C 1A1 Phone: 604-666-2431 Fax: 604-666-6990 paul.scott@ceaa.gc.ca	Chris Cuddy Chief Lands & Waters DIAND 10 Wellington Street Ottawa, Ontario K1A 0H4 Tel: 819-997-9381 Fax: 819-997-9623 e-mail: cuddyc@inac.gc.ca
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Sue Moodie Yukon Conservation Society 302 Hawkins St. Whitehorse, Yukon Y1A 31X6 E-mail: mining@ycs.yk.ca	Canadian Parks & Wilderness Society Box 31095 Whitehorse, Yukon Y1A 5P7 cpaws@cpawsyukon.org	Yukon Salmon Committee Lorelei Smith 100-400 Range Road Whitehorse, Yukon Y1A 3V1 salmon@yknet.yk.ca
Marg Crombie Assessment & Abandoned Mines Yukon Government **K419** Box 2703 Whitehorse, Yukon Y1A 2C6 Phone: 393-7098 E-mail: marg.crombie@gov.yk.ca	Dave Sherstone Team Leader Type II Mines Project Office DIAND 300 -300 Main Street Whitehorse, Yukon Y1A 2B5 Phone: 667-3360 E-mail: sherstoned@inac.gc.ca	Dave Power Town of Faro PO Box 580 Faro, Yukon Y0B 1K0 Phone: (867) 994-2728 E-mail: townof@yknet.yk.ca

Yukon Government

FAX TRANSMISSION SHEET
ENVOI PAR TÉLÉCOPIEUR

DATE: Sept 30/03 NUMBER OF PAGES/ *Nombre de pages:* 3 (including transmission sheet) *(y compris celle-ci)*

TO/*Destinataire:* Shannon Glenn D+T

FAX/*Télécopieur:* (416) 601-5901

FROM/*Expéditeur/Expéditrice:* Leslie Gomm
DAP - Env. Ass. Unit

FAX/*Télécopieur:* (867) 667-3216

MESSAGE: Shannon:
Here is the signed 'CEAA' determination for you.

Leslie

Note by SG dated October 2nd 2003: Per conversation with D. Shorestone, Signed on 30th of September

Please phone (867) _____ immediately if all pages are not received.
Composez le (867) _____ *immédiatement si la transmission est incomplète.*

Canadian Environmental Assessment Act Section 20 Determination/Decision
Responsible Authority – Department of Indian Affairs and Northern Development (DIAND)

Project: Anvil Range Mine Complex Water Licence Renewal (2004-2008)

Process: Environmental Assessment Screening – *Canadian Environmental Assessment Act* (CEAA) – harmonized with the *Environmental Assessment Act* (EAA) as per the draft Canada – Yukon Agreement on Environmental Assessment Cooperation.

Environmental Assessment Triggers and Responsible Authorities:
The project triggered DIAND and Government of Yukon, Executive Council Office (ECO), as responsible authorities under CEAA and EAA. The minister of ECO is triggered under the Law List Regulations because a Type A water licence is being renewed/amended. DIAND as the sole funder of the project is also a responsible authority.

Environmental Assessment Harmonization and Determination/Decisions:
Consistent with both the CEAA and EAA coordination regulations only one environmental assessment was conducted but consistent with the following sections of the cooperation agreement each RA is still responsible for making their independent determination/decision.

2. *The right of either party to carry out its legal responsibility and obligations is recognized and this Agreement creates no legal obligations on the parties.*

3. *This Agreement does not in any way affect or limit the jurisdiction or any rights, powers, privileges, prerogatives or immunities of Canada or Yukon.*

54. *Each party having an environmental responsibility will use the information generated by the cooperative environmental assessment for the purposes of their respective decision making, provided that each party is of the opinion that the information generated in the process meets the requirements of its environmental assessment legislation.*

DIAND has participated in and adopted the findings of the Environmental Assessment led by the Government of Yukon Executive Council Office which is appended.

DIAND Decision/Determination
DIAND has made a Section 20(1)(a) determination under CEAA on the condition that all mitigation and follow up measures identified in the EAA Screening Report of September 25, 2003 prepared by ECO are followed.

"subject to subparagraph (c)(iii), where, taking into account the implementation of any mitigation measures that the responsible authority considers appropriate, the project is

not likely to cause significant adverse environmental effects, the responsible authority may exercise any power or perform any duty or function that would permit the project to be carried out and shall ensure that any mitigation measures that the responsible authority considers appropriate are implemented;"

This report should be read with other documents housed in the Public Registry, Government of Yukon, Executive Council Office, Environmental Assessment Unit.

David Sherstone
Team Leader
DIAND, Type II Project Office
Screening Team Member

Elizabeth Hanson
A/Regional Director General
DIAND Yukon Region
For the Responsible Authority

Yukon Territory Water Board

Office des eaux du Territoire du Yukon

August 3, 2000

Doug Sedgwick
Deloitte & Touche
by fax: 416 601 6390

Re: Water Use Licence QZ95-003, Anvil Range Mining Corporation

The Yukon Territory Water Board has received a letter from Environment Canada and Fisheries and Oceans Canada in which they request the Board to initiate an amendment to water use licence QZ95-003. The letter, which is signed by Vic Enns and Gail Faulkner, and dated July 28, 2000, has apparently been cc'd to you at this fax number.

Could you please confirm that you are the appropriate person for the Board to address on this matter, and would you please provide an address and telephone number, as well as an email address if possible?

Please respond by fax to 867 668 3628, or by telephone 867 667 3980, or by email to whitej@inac.gc.ca.

Thank you.

Judi White, Manager
Water Board Secretariat

October 17, 2000

W.A. Treleaven
Senior Vice President
Deloitte & Touche Inc
BCE Place
181 Bay Street, Suite 1400
Toronto, ON M5J 2V1

file:qz95-003

Re: Anvil Range Mining Corporation

Thank you for your response to my letter of September 29, 2000. I regret that you did not receive the fax version of that letter, and that you did not have sufficient time to prepare a response for this month's Board meeting.

I would like to clarify that, at this point, we are dealing only with the issue of whether or not the water board will initiate an amendment to the water use licence. We are not dealing with the substance of that amendment. The Canadian Environmental Assessment Act is not a factor at this time.

As I indicated in my last letter, the Board would prefer to hear from the licensee before initiating an amendment to a licence. However, there is a need to respond to the Environment Canada request within a reasonable time. Therefore, this matter will be included for discussion at the November water board meeting. Any response that you provide by November 10, 2000 will be included for the Board's consideration at that meeting.

If the Board decides to initiate an amendment, then you will be advised immediately and DIAND will be asked to initiate a CEAA screening of the proposed amendment. Once DIAND advises of the date that the draft CEAA screening is likely to be available, then the Board will set a public hearing date. It would be premature, at this point, to speculate on timing for that event, since we don't know yet if the Board will initiate the amendment.

Thank you for copying your correspondence to our email address (ytwb@yukon.net).

Judi White, Manager
Water Board Secretariat

cc by email: wtreleavan@deloitte.ca, dsedgwick@deloitte.ca, `victor.enns@ec.gc.ca,

Deloitte & Touche LLP
Deloitte & Touche Inc.
BCE Place
181 Bay Street, Suite 1400
Toronto, ON M5J 2V1
Canada

Tel: (416) 601 6150
Fax: (416) 601 6390
www.deloitte.ca

February 7, 2001

Judi White
Manager, Water Board Secretariat
Yukon Territory Water Board
Sutie 106, 419 Range Road
Whitehorse, Yukon Y1A 3V1

Attention: Judi White, Manager, Water Board Secretariat

Dear Ms. White:

RE: Anvil Range Mining Corporation – Water License QZ95-003

I am replying to your letter dated January 16, 2001, which noted that the Yukon Territory Water Board had received confirmation from Environment Canada that they want the Board to proceed with Environment Canada / DFO's request to initiate an amendment to Water Use License QZ95-003.

As you are aware, Deloitte & Touche Inc. was appointed Interim Receiver of Anvil Range Mining Corporation pursuant to an Order of the Court dated April 21, 1998. We have been managing the day-to-day activities of the site for approximately three years following cessation of mining operations. As such, Deloitte and Touche Inc. cannot offer a formal opinion on whether the amended application should proceed as we are not the proponent in this case. It is also understood that DIAND is the principal funder of the Interim Receivership and accordingly, DIAND must be made aware of the Board's intentions and have input directly concerning the application.

We can assure you that as Interim Receiver, we continue to emphasize the importance of managing environment issues and risk in a diligent manner at the site to minimize any risk to the surrounding environment. The court reports, which are prepared every three months, continue to emphasize this priority relating to proactive environmental management. The following are examples of major programs that we are undertaking on behalf of the Federal Government this winter at the Faro mine site:

- Prepared and submitted a proposal and received government approval to construct a water treatment facility at the mill location for the Faro mine site. This water treatment facility should be ready for operation by March 31, 2001, in time for the spring freshet. This will ensure that there is adequate water treatment capacity in place to handle the Faro Pit water treatment requirements for many years in the future.

- A winter liming operation has been installed in early January 2001 to treat the cross valley pond water at the Faro location to enable the release of compliant water to the environment and thus lower the pond in preparation for the spring freshet. This program has been successful to date and compliant waters will be released and monitored on a regular basis.

- We have received approval from DIAND to carry out an assessment of the ground water conditions under the Faro tailings ponds and downstream from the ponds to bedrock depth. We are currently preparing the scope of work to be carried out utilizing our consulting engineering and mining expertise to determine the cost and timeframe for this program. It is estimated the program will be significantly in excess of $100,000 and will be carried out following the spring freshet.

I have also attached a letter responding to David Sherstone's letter dated December 14, 2000 to Deloitte & Touche relating to the water zinc levels in the Intermediate and Down Valley ponds. You were copied on the original letter and we believe it is worthwhile for you to have a copy of our response. As the letter notes, we have been very appreciative of the ongoing technical support and financial assistance we have received from DIAND as part of our ongoing proactive management of the environmental aspects at the mine site.

I believe it is worthwhile to note that based on our significant understanding of the environmental aspects at the site and their impact on the environment that it would not be appropriate to modify the license at this time. We believe further investigation and understanding of what is occurring at the tailings impoundment is necessary before proceeding with any program. We appreciate the investigations must be reasonably broad in scope and any proposed actions must integrate in a proper way with the long term closure plans. As you know, there has not been any long term closure plan approved for the site and we believe that this is an important activity that should be carried out within the next one or two years.

We can also advise that the Plan of Arrangement has been approved by various creditor classes and there will be a Confirmation Hearing before the Court on February 21st. With this in place, it will allow for the appropriate transfer of the mine property to a new legal entity. This we believe will ensure that a number of issues that need to be addressed will be in a more timely fashion as the complexities and number of parties involved in this administration will be greatly reduced.

We currently continue to meet all obligations under the current water license. During the past year, the dams have been inspected and have been reported on. The tailings are currently properly contained and all water has been tested regularly with no indications of non-compliant water being discharged from under the tailings. It is our submission that there is a lack of knowledge as to what is currently occurring if anything and a great deal further study must take place prior to any actions to potentially remove the tailings. We have recommended and as noted, DIAND has concurred with our recommendation to proceed with a study to assess the tailing impoundment. We believe that all matter pertaining to the amendment of the License with respect to the removal and transfer of tailings should be postponed until this study has been completed.

We very much wish to cooperate in this matter as an officer of the court and will be pleased to provide any further information that the Board may request.

Yours very truly,
DELOITTE & TOUCHE INC.
as Receiver and Manager of
Anvil Range Mining Corporation
and not in its personal capacity.

Per:

Wes A. Treleaven, CA, CIP
Vice-President

Yukon Territory Water Board

Office des eaux du Territoire du Yukon

FISHERIES & OCEANS CANADA

MAY 10 2002

WHITEHORSE, YUK

May 8, 2002

Lorelie Smith, Chair
Yukon Salmon Committee
100 - 419 Range Road
Whitehorse, YT Y1A 3V1

file: QZ95003-1

Re: Water Use Licence QZ95-003, Anvil Range Mining
Your letter of March 25, 2002

In March, 2001, the Board determined that it would not, at that time, initiate a public hearing into the Anvil Range water use licences. Since then, the Board has not had any formal communication from Deloitte and Touche regarding the status of Trustco. However, in a recent newsletter, the Department of Indian Affairs and Northern Development ("DIAND") advised that Deloitte and Touche will be submitting an Environmental Assessment Report in the near future, with the intention of proceeding with an application for renewal of the Faro water use licences.

I have asked Deloitte and Touche to provide the Board with an update on their intentions regarding the status of the Faro licences and, when that information has been received, and when there is a clearer picture of whether a public hearing on renewal is likely in the near future, the Board will revisit the question of whether or not a separate hearing should be initiated.

Judi White, Manager
Water Board Secretariat

enc: Letter to W.A. Treleaven, 8.5.02

\qz95003\2002\yscmay8

cc W.A. Treleaven, Deloitte & Touche Inc
BCE Place, 181 Bay Street Toronto, ON M5J 2V1

Yukon Territory Water Board
Office des eaux du Territoire du Yukon

May 8, 2002

W.A. Treleaven
Senior Vice President
Deloitte & Touche Inc
BCE Place, 181 Bay Street
Toronto, ON M5J 2V1

file: QZ95003-1

Re: Water Licences for Faro Mining Properties, QZ95-003 and IN89-002

Some time ago, the Yukon Territory Water Board received a request to hold a public hearing into a possible amendment of the Faro Mine water licence (QZ95-003). Correspondence to the Board at that time indicated that a holding company, Trustco, would be formed to look after the Faro mining properties. The Board declined to hold the hearing pending the formation of Trustco, which was expected in the relatively near future. Over a year has passed and the Board has not received any indication that Trustco had been formed; in fact, indications are that this plan may have materially changed.

The two water licences for the Faro mining properties (QZ95-003 and IN89-002 which covers the Vangorda and Grum sites) are due to expire Dec. 31, 2003. Information from DIAND indicates that you plan to seek renewal of both licences. The *Yukon Waters Act* calls for a mandatory public hearing for renewal of a Type A water licence and any renewal would also require the approval of the Minister of Indian Affairs and Northern Development. The public hearing should therefore be held no later that June 2003, in order to avoid any problem with the current licences lapsing. The Board does not hold a public hearing until at least a draft screening under Canadian Environmental Assessment Act ("CEAA") screening is available.

It would therefore be helpful if you can provide an update with regard to the current plans for the Faro Mining Properties and the status of your application for renewal, including any progress on a possible CEAA screening of the renewal that may be underway.

Judi White, Manager
Water Board Secretariat

\qz95003\2002\treleavenmay8

cc: W.A. Treleaven. Deloitte & Touche
BCE Place, 181 Bay Street, Toronto, Ont. M5J 2V1
Ross River Dena Council
Little Salmon Carmacks First Nation
Carmacks RRC
Selkirk First Nation
RRC
Gordon Zealand, DFO
Paul Scott, CEAA Agency, Vancouver
Bev Brown, Habitat Steward
Yukon Fish and Wildlife Management Board
Yukon Conservation Society

Attachments: Yukon Territory Water Board letter to Yukon Salmon Committee; May 8, 2002

Yukon Conservation Society

INC. 1968

Feb. 23, 2001

2001 FEB 23 P 3:51

HAND

QZ95-003-1

Ms. Judi White,
Manager,
Water Board Secretariat,
Yukon Territory Water Board,
Suite 106, 419 Range Road,
Whitehorse, Yukon
Y1A 3V1

Dear Ms. White,

The Yukon Conservation Society supports the request by Environment Canada (first submitted on July 28, 2000) for a public hearing to consider an amendment to water use licence QZ95-003 requiring the movement of tailings. Could you please add YCS to the distribution list for this amendment request and inform us of Board's decision on this matter.

Yours Truly

Bob Van Dijken

Bob Van Dijken
Yukon Conservation Society Mining Committee

FILE
W. B

cc Deloitte & Touche Inc

Box 4163 • Whitehorse • Yukon • Y1A 3T3 • Phone: (867) 668-5678 • Fax: (867) 668-6637

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Wes A. Treleaven, CA, CIRP
(416) 601-4482

Deloitte & Touche

June 18, 2002

Tom Potter
Miller Thomson LLP
Robson Court
1000-840 Howe St.
Vancouver, BC V6Z 2M1

Dear Mr. Potter:

RE: ANVIL RANGE MINING CORPORATION ("ANVIL RANGE")

We recently received a request from the Yukon Territory Water Board requesting an "update with regard to the current plans for the Faro Mining Properties and the status of your application for renewal including any progress on a possible CEAA screening of the renewal that may be underway".

We have enclosed for your information, a copy of our response. Also, we wish to advise that Leslie Gomm, Manager of Project Assessment with DIAND's Environmental Directorate and who has been assigned our application for the water licence renewal, has requested dates for public meetings.

We confirm that we will be giving a presentation to the Regional Environment Review Committee on the morning of Wednesday, August 21st and that evening a public meeting will be held in the City of Whitehorse. Public meetings will then be held the evening of Thursday, August 22nd in Ross River and again during the evening on Friday, August 23rd in the Town of Faro.

Hopefully, you will be able to attend the TAC meeting to be held in Faro on Wednesday, July 17th at which time, we will be discussing with those attending, the water licence renewal process.

If you have any questions, or wish to discuss how we are proceeding with our water licence renewal application, please do not hesitate to contact me.

Yours very truly,
DELOITTE & TOUCHE INC.
as Receiver and Manager of
ANVIL RANGE MINING CORPORATION

Per: _____

Wes Treleaven, CA, CIRP
Senior Vice-President

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Deloitte & Touche

June 11, 2002

Yukon Territory Water Board
Suite 106, 419 Range Road
Whitehorse, Yukon Y1A 3V1

Attention: **Judi White, Manager**
Water Board Secretariat

Dear Sirs:

RE: ANVIL RANGE MINING CORPORATION ("ANVIL RANGE")

We are writing in response to your recent inquiry requesting "an update with regard to the current plans for the Faro Mining Properties and the status of your application for renewal and including any progress on a possible CEAA screening of the renewal that may be underway."

Deloitte & Touche Inc. was appointed Interim Receiver of Anvil Range pursuant to an Order of the Ontario Court (General Division) on April 21, 1998. We have previously forwarded to you a copy of the appointment order. During the term of our appointment, Deloitte & Touche Inc. has overseen the management of the property under the terms of the current water licences. The Faro mine site operates under licence QZ95-003 and the Vangorda Plateau mine site under licence IN89-002. As your letter confirms, both of these licences will expire December 31, 2003.

Throughout the term of our appointment, we have continued to manage the properties diligently, following the terms of the current water licences and submitting to you all required reports.

Status of the Memorandum of Understanding

In the fall of 1999, DIAND, YTG and Cominco Ltd. entered into a memorandum of understanding, (the "MOU") which would have seen a transfer of the mine property to a holding company ("Trustco") which would have continued to oversee the ongoing management of the property.

A number of property evaluations were carried out, during which the price of zinc and lead concentrates continued to decline. We believe the parties to the agreement acted in good faith and tried their best to complete the accord. However, events and market changes, which occurred during the period, caused the parties to reassess their positions and they concluded that it would be best to terminate the MOU. In the Interim Receiver's Twenty-Eighth Report to the Court dated May 17, 2002, we advised the Court of the following:

Deloitte
Touche
Tohmatsu

(Paragraph 93) - Memorandum of Understanding

As discussed in numerous earlier reports, in the fall of 1999, DIAND, YTG and Cominco Ltd. ("Cominco") entered into a memorandum of understanding (the "MOU"), the purpose of which was to outline an agreement with respect to the proposed ongoing management of the Mine. The nature of the MOU was similar to an offer letter that contemplated a number of substantive agreements to be entered into. No formal agreements were ever entered into, and the MOU was terminated in February 2002.

Water License Renewal

Goals

During November 2001, we attended meetings in Ottawa with senior DIAND officials. We discussed our proposed budget for the 2002/2003 year and raised issues in regards to the need to initiate steps as soon as possible to renew the water licences, having become aware of the lengthy regulatory process one must go through. Following our meetings, and after further consideration of various alternative options, DIAND advised that steps should be taken by the Interim Receiver to proceed with a renewal application of the water licences.

Shortly thereafter, we attended in Whitehorse in January to further define the strategy and timelines. Prior to doing so, we reviewed the Guidelines for Environmental Assessments for Mining Projects in the Yukon and regulatory requirements to be followed. We met with Mr. Ian Church, Director - Environmental Directorate; Jodi Kaden, DAP Manager and other representatives of DIAND Water Resources, DOE, and DFO.

Based on the input we received, we concluded that the objective of the Interim Receiver should be to apply for a single water licence for the site for the period January 1, 2004 to December 31, 2008 (five years). The period of time is proposed as necessary to adequately plan and obtain regulatory approval for a Final Closure and Reclamation Plan. A document intended for that purpose, termed the Integrated Comprehensive Abandonment Plan ("ICAP"), was filed in 1996 by Anvil Range Mining Corporation, but was never heard nor approved. Furthermore, our review of the 1996 submission indicates that significant gaps exist, particularly with respect to site characterization, between the 1996 ICAP and a plan that could today realistically be used to close the property in a safe and effective manner. As such, activities which we will supervise and which will be carried out during 2004/2008 will include:

- As a first priority, to continue to care, maintain and protect the property and the environment. We will not be seeking any changes in regards to the ongoing care and maintenance with respect to water management initiatives at the property. We will continue to treat all water being discharged and will ensure that it meets the stipulated licence qualities as set out in the current licences.

- To consult with stakeholders and we will be designing and initiating a full consultation process to involve the key stakeholders.

- Handle any emergency reclamation work at the site. During the past couple of years, unexpected events have occurred due to changing weather patterns (e.g. landslides) and we have immediately applied for and received funding from DIAND to complete the appropriate reclamation work. It is our intention to continue to ensure that all such emergencies be attended to in a timely manner.

- To continue selected reclamation of mine elements which are not integrated or linked to the rest of the properties from the perspective of closure planning. In 1999 and 2000, special work projects, in clearing some of the scrap steel off of the property was carried out by contracting with residents of Ross River and Faro. We would plan and hope that similar projects would fit into the longer term closure planning and could also be carried out thus providing socio-economic benefits to the communities.

- To carry out scientific engineering studies to be designed to fill identified knowledge gaps required for the closure of this property to be the foundation of developing a final closure and reclamation plan.

It will also be our commitment that such a Final Closure and Reclamation Plan be filed by the end of 2006 to ensure adequate time for regulatory review and approval before expiry of the next water licence in 2008. It is our objective to continue to push the process and complete the required studies so that a comprehensive plan can be filed. The longer this plan is delayed, the cost which will eventually be incurred to close this property appropriately will increase significantly and will cause further hardship to the local communities and stakeholders.

It is therefore our hope that all parties will cooperate fully in an open, communicative format, so that in the best interest of all parties, the process will be handled in a timely fashion within the stipulated time frames and that we can complete the required work as planned.

Steps taken to date

To support both our short-term goals of renewing and combining the water licences and our long-term goal of developing a Final Closure and Reclamation Plan, a four-day proponent planning workshop was held in Vancouver on April 14th – 17th. This workshop was attended by Deloitte & Touche personnel in our capacity as Interim Receiver and proponent on this project, and by DIAND in their capacity as funders of the project and hence also as proponent. The workshop was also attended by sub-consultants with specialties in mine closure and environmental assessment. The workshop objectives were as follows:

- To identify and define remediation projects that can be undertaken during the next water licence term (between 2004-2008).

- To identify critical information needs for the water licence renewal for the Final Closure and Reclamation Plan that will be developed during 2002-2006.

- To design and prioritize investigations to acquire such information.

The results of this workshop were integrated into a Project Description, which has been filed with DIAND Environment Directorate in Whitehorse to initiate the CEAA review process. For the Board's information, we have enclosed a copy of the Project Description which has been filed and we have also enclosed a copy of the Interim Receiver's Twenty-Eighth Report (without Exhibits).

We are currently working with our sub-consultants (SRK Consulting Engineers and Gartner Lee Limited) to identify the potential scope of the Environmental Assessment Report which we will have to submit as part of the CEAA process. While the timing cannot be exactly identified, we anticipate receiving the EAR Guidelines from the Regional Environmental Review Committee by the middle of August. We will prepare our EAR on the basis of these Guidelines and anticipate submitting the EAR in the early fall.

In terms of public consultation on the CEAA process for the proposed water licence renewal, we will be attending at the mine site the week of July 15th, during which we will be having a TAC meeting on Wednesday, July 17th and a follow up meeting on July 18th. We have written to the TAC members advising of our plans in this regard and have provided those on the TAC who are not on the Regional Environmental Review Committee with a copy of the Project Description. Public meetings will also be held on August 21, 22 and 23 in Whitehorse, Ross River and Faro. Further public meetings will be held following the submission of the EAR and following the completion of the review of the EAR by the Responsible Authorities under CEAA.

Finally, from a timing perspective regarding an application for renewal to the Yukon Water Board, our preference is to wait until the CEAA review process is completed. However, we recognise that there may be an overlap between the end of the CEAA process and the initiation of the renewal process with the Water Board. Our plan is to submit an application allowing sufficient time for the Board's review and consultation process. As such, we would welcome your feedback regarding timing.

Closing

If you would like to have a meeting to discuss any of the points which are raised in our Court Report or the Project Description, we will be more than pleased to meet with you and others. We do wish to have an open line of communication to ensure that the ongoing process is handled in the most professional manner possible and to ensure that all information is before the Board in a timely fashion.

Our internal team responsible for this project are Valerie Chort, the National Director of Environmental Health and Safety Services (phone # 416-601-6147) and Shannon Glenn, a manager within our Environmental Group (phone #: 416-601-6454). Please feel free to contact either of them at any time or myself. If you would like, we would be pleased to meet with you to introduce ourselves on Monday, July 15th, prior to travelling to Faro.

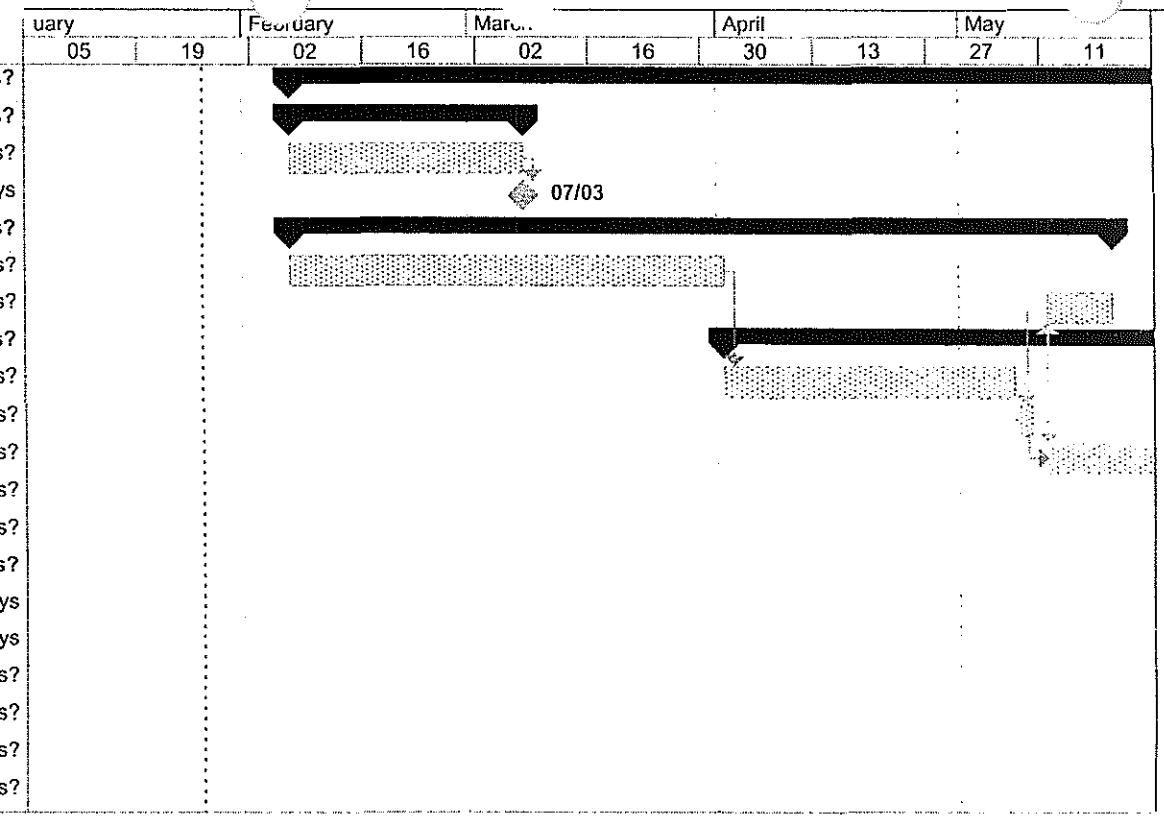
I trust that this letter and attachments will be of assistance to you and if you have any questions, please do not hesitate to contact me.

Yours very truly,
DELOITTE & TOUCHE INC
in its capacity as Interim Receiver of
ANVIL RANGE MINING CORP.

Per:

Wes A. Treleaven, CA, CIRP
Senior Vice-President

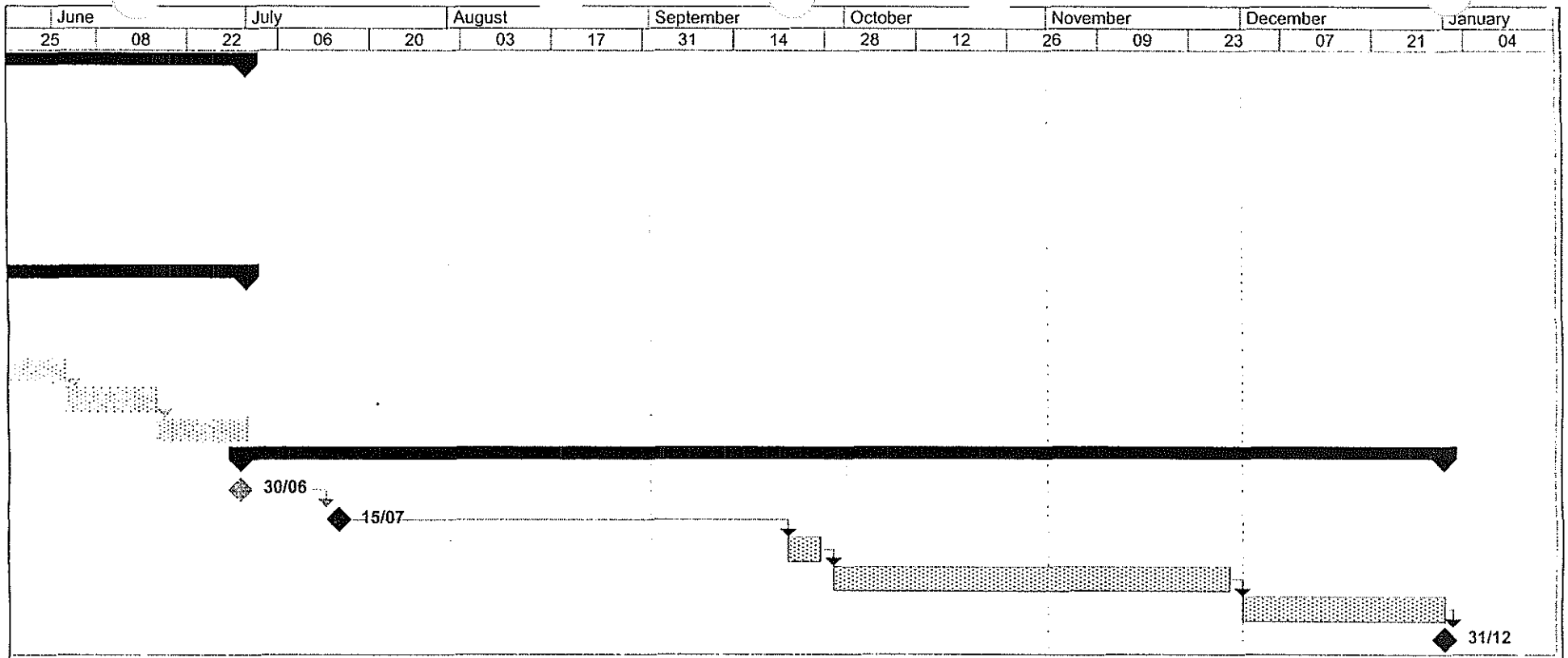
ID	Task Name	Duration
1	**CEAA**	**102 days?**
2	**Guidelines**	**21 days?**
3	RERC Review of Draft Guidline	21 days?
4	Issuing of Final Guidlines	0 days
5	**EAR**	**72 days?**
6	Production of EAR document	38 days?
7	Clarifications	6 days?
8	**EAR Screening**	**64 days?**
9	RERC/stakeholder review	26 days?
10	RERC Workshop	2 days?
11	Writing Draft screening	16 days?
12	Stakeholder review of draft scre	10 days?
13	Final screening	10 days?
14	**Water Board Application**	**133 days?**
15	Submission of Application	0 days
16	Gazetting	0 days
17	Hearing	5 days?
18	Writing Licence	45 days?
19	Ministerial approval	23 days?
20	Licence issued	0 days?



Discussed at DIAND Env. Discharge and Water Board Secretariat Meetings by Pat Broom Jan 2003.

Project: WLR going forward
Date: Mon 27/01/03

Task
Split
Progress
Milestone
Summary
Project Summary
External Tasks
External Milestone
Deadline



Project: WLR going forward
Date: Mon 27/01/03

Task
Split
Progress
Milestone
Summary
Project Summary
External Tasks
External Milestone
Deadline

MILLER THOMSON LLP
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March 13, 2003

Murray J. Leitch
Associate Counsel
Direct Line: 867.633.2075
Direct Fax: 867.667.7665
mleitch@millerthomson.ca

File: 059135.0001

BY HAND

Yukon Territory Water Board
106 – 419 Range Road
Whitehorse, Yukon
Y1A 3V1

Attention: Judi White

Dear Sirs/Mesdames:

Re: Deloitte & Touche Inc. in its capacity as Interim Receiver of Anvil Range Mining Corporation ("Anvil Range") - Water Licenses #QZ95-003 and IN89-002 (the "Water Licenses")

As you are aware, we have been retained by Deloitte & Touche, Anvil Range's Interim Receiver, with respect to the forthcoming applications it will be making on behalf of Anvil Range with respect to the removal of the Fresh Water Supply Dam ("FWSD") and for the renewal of the Water Licences. We have been instructed by the Interim Receiver to update you as to the status and timing of these forthcoming applications.

FWSD

The Interim Receiver had identified, via its risk management approach, a high risk associated with the FWSD. This conclusion was reached as a result of concerns regarding the integrity of the low level pipe within the dam structure. Following communication of its concern to regulatory agencies, the Interim Receiver received a directive from the Department of Fisheries and Oceans ("DF0") to remove the dam prior to freshet 2004. This order was received last fall and contained specific scheduling requirements, including the submission of preliminary designs for removal by February 3 2003 and a final design by April 1, 2003. The Interim Receiver established, in consultation with regulatory agencies, a schedule of steps for design and permitting of the removal of the dam and, in following this schedule, has been working closely with DFO and other interested agencies.

Based on this schedule, it is the intent of the Interim Receiver to make an application to the Water Board on or about April 10, 2003 to allow removal of the FWSD.

Water Licences Renewal

By its letter to you last June, the Interim Receiver first advised you of its intention to apply to

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the Water Board to renew and amend the Water Licences. In that letter, the Interim Receiver referenced, in bullet form, from its two volume Project Description dated May 31, 2002, the five activities it expected to carry out in the period of the proposed renewal (2004 to 2008) both in relation to care and maintenance of the site and Abandonment and Reclamation ("AR") planning.

These five steps were:

- as a first priority, to continue to care, maintain and protect the property and the environment,
- to consult with stakeholders,
- to manage any emergency reclamation work on site,
- to continue selected reclamation of mine elements which are not integrated or linked to the rest of the property from the perspective of closure planning,
- to carry out scientific engineering studies that are related to the preparation of a final closure and reclamation plan for the property, and
- to prepare a final closure reclamation plan.

During the summer and fall of 2002, the Interim Receiver met on many occasions with interested parties. For details with respect to these meetings and the timing therof, we would refer you to the enclosed 29th and 30th Reports of the Interim Receiver. Much of the focus and content of these meetings related to the need for AR planning and the responsibility for this planning. For this reason, in September 2002, the Interim Receiver prepared and filed with DIAND Environment Directorate a Project Description Supplement dated September 16, 2002.

Specifically, the Supplement focused on:

- the management context and a clarification of the role of the Interim Receiver;
- a technical analysis of the 1996 Integrated Comprehensive Abandonment Plan (the "1996 ICAP") and previous closure documents; and
- an overview of process flow for closure planning and the interconnections between the studies.

In January 2003, at a Technical Advisory Committee ("TAC") meeting held by the Interim Receiver, in Whitehorse (the "January TAC Meeting"), it was announced, on behalf of DIAND, that the federal Government recognized that the mine was not going to reopen and that closure planning was going to transition to a project team involving all three levels of Government (i.e. federal, territorial, and First Nations). This announcement represented a shift in the direction of the Interim Receiver's involvement in the management of the Mine.

Consequently, the scope of the project, as had been originally defined in the Project Description, was narrowed. The new scope is described in the Guidelines for the Environmental Assessment Report and is limited to the Interim Receiver's care and maintenance activities. These Guidelines were issued March 10, 2003 in final form and the Interim Receiver expects to have its Environmental Assessment Report finished by mid April 2003. The Interim Receiver has been advised by the Responsible Authorities that the draft CEAA screening will be completed by early June.

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Shannon Glenn of the Interim Receiver met with you in January and again on March 10th to personally update you of the steps that have been taken by the Interim Receiver and the progress that has been made.

Around mid May 2003, the Interim Receiver intends to file with the Water Board its applications to renew and amend the Water Licences. These applications will seek:

1. a merger of the two licences into one licence;
2. a five year renewal of the new combined licence;
3. minor changes to the monitoring requirements; and
4. a deferral of the various obligations in the Water Licences with respect to Abandonment and Reclamation to allow sufficient time to conduct a proper review and study of the closure options.

From its discussions with the various interested parties, the Interim Receiver does not expect any strong opposition to the portion of this application relating to care and maintenance.

Although the Interim Receiver has and continues to move this application forward as quickly as possible, it is concerned about the ever more quickly approaching expiry date of the two Water Licences, being December 31, 2003. Please advise the writer as soon as possible if you feel this timetable is too optimistic or unrealistic.

We trust that you find the foregoing in order and we look forward to hearing from you regarding any concerns you have. Otherwise, we will look forward to dealing with you after the applications have been filed.

Yours truly,

MILLER THOMSON LLP

Per:

Murray J. Leitch
MJL/az

c: Deloitte & Touche Inc.
Attention: Shannon Glenn

Technical Advisory Committee

Regional Environmental Review Committee

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FAX TRANSMISSION COVER

URGENT

To:	**Attention: Shannon Glenn** Deloitte & Touche LLP 1.416.601.6454	**Fax:**	**1.416.601.5902**
From:	Murray J. Leitch 867.633.2075 mleitch@millerthomson.ca	**File:**	059135.0001
Date:	April 28, 2003	**Pages** (including this cover):	3

If you have any problems with this transmission, please contact:
Bette Boyd at 867.633.2080

MESSAGE

Hi Shannon,

Further to your voice mail message, attached is the responding letter from Yukon Water Board dated March 28, 2003.

Murray

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NOTICE
This fax is intended for use only by the persons to whom it is specifically addressed above and should not be read by, or delivered to, any other person. This fax may contain privileged or confidential information. If you have received this fax in error, please notify us immediately by calling the sender's direct line above (collect if necessary). We thank you in advance for your co-operation and assistance.

Yukon Water Board
Office des eaux du Yukon

RECEIVED
MAR 31 2003

March 28, 2003

QZ95-003, gen corresp.

Murray J. Leitch
Miller Thomson
202 -208 Main St.
Whitehorse, YT Y1A 2A9

Re: Water Use Licences QZ95-003 and IN89-002, Anvil Range

In your letter of March 18, 2003 you advised that the Water Board can expect to receive two applications for type A water use licences at Faro:

1. An application to permit the Receiver to breach the freshwater dam, with the project scheduled to proceed in the summer of 2003, and

2. An application for a five year renewal of the two current licences, one of which will expire at the end of 2003.

Keeping in mind that the Board has not received either application, and that it is always difficult to make any predictions of how long it will take the Board to reach decisions on any application, I do want to advise you that your assumptions regarding how long it may take to conclude deliberations on either proposed application are, at best, optimistic.

In meetings with the consultants about these two proposed projects, I have tried to caution them that it is unreasonable to expect the water board to reach decisions on either of these two proposed projects in any time period of less than six months. Moreover, since there is other business currently in process at our office, and considering that the Board has not held a public hearing into the Faro operations for several years, so that there could be a significant level of public interest, it is very possible that it could take the Board considerably longer to conclude a hearing and reach decisions on either application.

..../2

The Board may require some additional information about these applications, beyond the required information, such as:

Discussions to date indicate that both applications will be for type A quartz undertakings. Were other undertakings considered? Although the description of a quartz undertaking in the *Yukon Waters Act* regulations is not specific, it might be argued that there should be at least a potential for active mining in a quartz undertaking. In this case, a decision has been made that the mine will not reopen.

The financial responsibility of the applicant is an issue that must be addressed before the Board can issue a licence. Correspondence indicates that the applicant will be the Receiver, but that financial responsibility will rest with DIAND. Is this correct? In that case, a question is likely to arise as to why DIAND is not an applicant.

These two matters are raised at this time only to assist the applicant in determining what additional information they may want to include with their applications, since they may come up during the public review of the applications.

Please note that our office will be devolved to the Government of Yukon on April 1. Our mailing address and general email address will remain the same, but our phone and fax numbers will change to the numbers that are indicated on this letterhead. Mirror legislation has been passed, and is available from our office, or through the Government of Yukon website at http://www.gov.yk.ca/projects/devo/mirror .

Judi White, Manager
Yukon Water Board

cc: S. Glenn, by email
M. Leitch by email

Yukon
Water Board

Office des eaux
du Yukon

June 12, 2003

File: QZ03-059

Shannon Glenn, Manager
Deloitte & Touche
1900 - 79 Wellington St. W
PO Box 29 TD Centre
Toronto, ON M5K 1B9

RE: WATER USE APPLICATION QZ03-059, ANVIL RANGE
RENEWAL

This application is currently being reviewed to determine if the information is adequate for public review.

Attached to this letter are a copy of the Board's draft guidelines for Type A Quartz Mining Undertakings, and a copy of the information sheet that the Board requires to be completed.

With regard to the information sheet, it is likely that many of the information requirements are satisfied in the report that accompanied your application and, in that case, it will be sufficient to reference the appropriate section and page of the report. Please note, also, that the Board will require that all drawings be sealed by a professional engineer licensed to practice in the Yukon.

In order to expedite this review, I will send you this letter and the documents by email today.

Judi White, Manager
Water Board Secretariat

cc Murray J. Leitch
Miller Thomson

Suite 106, 419 Range Road, Whitehorse, Yukon Y1A 3V1 Ph: 867-456-3980 Fax: 867-456-3890
419, chemin Range, bureau 106, Whitehorse (Yukon) Y1A 3V1 Tél. : 867-456-3980 Téléc. : 867-456-3890
E-mail: ytwb@polarcom.com *Courriel: ytwb@polarcom.com*

filename: quartzguidedft

YUKON TERRITORY WATER BOARD

LICENSING GUIDELINES FOR

TYPE A QUARTZ MINING UNDERTAKINGS

DRAFT
January 2003

INTRODUCTION

Under the terms of the *Yukon Waters Act (*the *Act* or *"YWA")*, the Yukon Territory Water Board is charged with licensing the use of waters and the discharge of wastes into waters within the Yukon Territory. In these guidelines, the terms "use of waters and 'Water use' and the like will be deemed to include the deposit of waste.

The *Act* and associated *Regulations* recognize various types of undertakings relating to the use of waters and the deposit of wastes, as well as different categories of licences. The types of undertakings include Industrial, Placer Mining, Quartz Mining, Municipal, Power, Agricultural, Conservation, Recreational and Miscellaneous. Licences are categorized as either Type A or Type B according to various thresholds of use and the category of the undertaking.

Through the *Act* and *Regulations*, the Board is mandated to receive and review applications for the use of water and the deposit of wastes, carry out public reviews, and establish appropriate terms and conditions controlling each requested use.

The purpose of these guidelines is to publicize the criteria for the Board's deliberations regarding the licensing of Type A Quartz Mining Undertakings and to clarify the Board's expectations on such applications. They are not intended to serve as fixed standards for licensing; nor do they represent minimum licensing requirements. Rather, they are intended to set out a framework of principles and policies that the Board can apply in its licensing deliberations. The Board may deviate from or supplement the guidelines. Similarly, the Board may require specific licence conditions for particular undertakings, on a case-by-case basis.

The guidelines are arranged in a hierarchical format. The broadest principles are stated first and increasingly specific guidelines follow. Some of the guidelines are intended to apply at the application stage and others either during or after the licensing process.

The guidelines reference the submission of "preliminary" and "detailed" designs. These two terms and their applicability are further described in the guidelines. However, to be clear, the Board notes that it does <u>not</u> require detailed designs at the application stage.

1. STATUTORY REQUIREMENTS

The mandate of the Yukon Territory Water Board is described in Section 12 of the *YWA*:

> **"The objects of the Board are to provide for the conservation, development and utilization of waters in a manner that will provide the optimum benefit therefrom for all Canadians and for the residents of the Yukon Territory in particular."**

The Board also has statutory obligations under Chapter 14 of the Umbrella Final Agreement (*"UFA"*), principally in sections 14.8 and 14.9. Section 14.8.0 of the *UFA* provides that the Board shall not authorize any substantial alteration of the quantity, quality or rate of flow of water on or adjacent to settlement land, unless it is satisfied that:

(a) there is no alternative which could reasonably satisfy the requirements of the applicant; and

(b) there are no reasonable measures by which the applicant could avoid causing the alteration.

Section 14.9.0 imposes similar obligations upon the Board where a traditional use of water by a First Nation person in their traditional territory may be adversely affected by a licenced use.

In addition, as a federal authority for Type A licence, the Board's actions in enabling a project are suspended until a screening under the *Canadian Environmental Assessment Act ("CEAA")* has been completed and a determination has been made under that legislation.

Mining projects must also meet the requirements of the *Metal Mining Liquid Effluent Regulations ("MMLER")* for the discharge of waste.

2. PERFORMANCE OBJECTIVES

2.1 In licence proceedings, the Board will endeavour to:

2.1.1 protect public health and safety and, in particular, minimize risk to human life.

2.1.2 avoid, minimize and/or mitigate significant adverse environmental affects from the potential uses of waters authorized by it under the *Yukon Waters Act*.

2.1.3 achieve the objectives set out in the mitigation included in the *CEAA* screening, subject to the Board's authority and responsibility under the *YWA* and the *UFA*.

2.1.4 consider long-term ecosystem impacts, including cumulative effects.

2.1.5 avoid, minimize and/or mitigate negative socioeconomic and financial impacts of authorized water uses on the public.

2.1.6 avoid, minimize and/or mitigate negative economic and financial impacts on water users, consistent with its other obligations to the public.

2.1.7 issue licences with conditions that address the specific aspects of the project being authorized and the site under development.

2.1.8 issue licences that are clear and enforceable and administratively consistent.

2.1.9 issue licences that recognize the possibility that the life of the project may exceed the term of a particular licence and that impacts or potential impacts of a particular project may persist or develop after activity directly related to the project has ceased.

2.1.10 encourage the use of both proven and innovative technologies. In the case of unproven technologies, the Board will take a cautious approach, expecting Applicants to provide more detailed rationales and contingency plans than might be expected in the case of proven technologies.

2.1.11 act promptly and openly, pursuant to the principles of procedural fairness and natural justice.

3. INFORMATION GUIDELINES FOR APPLICANTS

3.1 The Board expects that Applicants for Water Use Licences will:

3.1.1 submit to the Board project designs which reflect a "best practicable technology" approach to development which considers state-of-the-art technology in the context of economic feasibility. If there are technical or economic reasons for the use of less than state-of-the-art technology, then the Applicant will be expected to submit clear and comprehensive explanations and justifications to the Board.

3.1.2 submit project designs which presume that the life of the project may exceed the term of the Licence and that impacts or potential impacts of the project may persist or even develop after human activity directly related to the project has ceased.

3.1.3 submit comprehensive information regarding baseline conditions at and near the project site. Such information will normally include:

a) seasonal water quality and quantity;
b) flow patterns;
c) stream sediment data;
d) climatic data monitoring (particularly precipitation);
e) fish and other aquatic organisms;
f) wildlife; and
g) existing human activities and uses of resources.

3.1.4 submit information demonstrating that potential impacts to traditional uses and water rights under the *UFA* have been considered and that appropriate mitigation measures have been included.

3.1.5 submit designs based on a comprehensive water balance analysis with all assumptions and calculations clearly explained, using a water quality model that is sufficiently detailed to assess seasonal performance of the project on both a short-term and long-term basis.

3.1.6 submit design information which is to a sufficient level of detail so as to minimize the necessity for licence amendments due to subsequent changes in the project. In general, project designs should be at a preliminary design level which follows from the prefeasibility and/or conceptual studies required to determine the desirability of proceeding with a particular project. The preliminary design establishes the location, appearance and operation of the project so that approvals for the project can be obtained and so that initial orders can be placed with suppliers. The preliminary design is based on specific site investigations, although additional investigations may be required later in the design process.

The preliminary design should include:

a) a complete project description;
b) initial specifications;
c) small-scale preliminary plans showing layouts and general dimensions of structures and components;
d) a project schedule covering engineering, procurement and construction activities; and
e) a budget cost estimate.

No significant changes to the project should be made after the completion of the preliminary design, although additional details of the design will be developed.

3.1.7 submit applications that contain a preliminary decommissioning and reclamation plan for closure of the project that is based on progressive reclamation. The plan should be designed to ensure long-term stability, maintenance and replacement of any structures remaining after closure, to minimize and/or mitigate significant adverse environmental effects, and to provide for ongoing monitoring. The plan's ultimate objective should be an environmentally sound abandonment of the site without further human intervention, unless the Applicant can demonstrate that a suitable long-term strategy and plan involving human activity has been developed.

3.1.8 submit a complete estimate of the cost of implementing the reclamation plan, including information on the derivation of unit costs used in the estimate. The cost estimate may be tied to a plan for staged mine development, but the complete cost of reclamation at any stage in the development must be identified.

3.1.9 submit a proposal showing how the Applicant plans to finance the implementation of the reclamation plan during any stage of mine development.

3.1.10 submit a detailed proposal for the review and approval process to be followed to release and utilize any financial security (or similar instrument) accumulated during mine life, in order to implement the reclamation plan, if the release of accumulated funds is part of the Applicant's financial proposal. Applicants should note, however, that while financial security is commonly called for by water licences, the security is not held by the Board and cannot be utilized or released by the Board, but rather by the Minister who approves the licence, if one is issued.

3.2 The Board gives notice to potential Applicants that its policy is that:

3.2.1 that dilution of wastewater is not an acceptable approach to wastewater management or to compliance with wastewater quality standards.

3.2.2 the LT_{50} 96-hour bioassay is the recognized test for non-toxicity of effluent.

4. DESIGN GUIDELINES

4.1 The design, construction, operation, maintenance and surveillance of dams and associated water management structures should be carried out in a manner which is consistent with the recommendations contained in the *Canadian Dam Safety Guidelines* (January 1999) for the Very High Consequence Category.

4.2 Dams and associated water management structures should be designed to withstand the Maximum Credible Earthquake (MCE) and pass the Probable Maximum Flood (PMF).

4.3 Rock dumps and heaps should be designed to have a minimum factor of safety under static loading of 1.3 for short term cases (i.e. within the mine life) and 1.5 for long term cases (i.e. abandonment) as described in the *Investigation and Design of Mine Dumps* (British Columbia Mine Dump Committee, 1991). The factor of safety for dams will be as recommended in the *Canadian Dam Safety Guidelines* (January 1999).

4.4 Designs for dams and associated water management structures, rock dumps, and heaps should recognize the probable presence of permafrost and should include appropriate measures to maximize the stability of the structures consistent with recommendations contained in the *Canadian Dam Safety Guidelines* (January 1999).

5. LICENCE GUIDELINES

5.1 If a licence is issued, it may contain a requirement to submit to the Board prior to the commencement of construction, final detailed design drawings, construction plans and specifications for all proposed structures and facilities including, but not limited to:

a) waste rock dumps;
b) dams;
c) coffer dams;
d) impoundments;
e) drainage works;
f) diversions;
g) spillways;
h) waste storage facilities;
i) water supply systems;
j) wastewater transportation systems and treatment facilities; and
k) any other structure or facility relevant to the conditions of the licence.

Detailed design is the last level of project design. It should include the results of any additional investigations identified during the preliminary design process and all of the

final detailed drawings and specifications required to construct the project. All engineering drawings and specifications submitted to the Board must be sealed by a professional engineer licenced to practice in Yukon.

5.2 If a licence is issued, it may contain a requirement for water quality monitoring points in addition to the points of compliance. Such additional monitoring points may be established for the purposes of monitoring the overall performance of the project and for identifying emerging problems in their early stages, as well as, for example, measuring and monitoring environmental effects including receiving water quality and biological and physical impacts.

5.3 If a licence is issued, it may contain a requirement to submit to the Board details of any modifications to or variations from the designs previously submitted, in advance of any related construction. Such submissions must include an explanation of the reasons for the change and an assessment of the potential environmental impact. All such design modifications must be sealed by a professional engineer licenced to practice in Yukon.

5.4 If a licence is issued, it may contain a requirement to submit to the Board a comprehensive decommissioning and reclamation plan, based on the preliminary plan submitted with the the Application, and a requirement to update the plan, including the cost estimates, from time to time as circumstances warrant.

5.5 If a licence is issued, it may contain a requirement to submit to the Board final record (as-built) drawings of all structures and facilities following the completion of construction. All drawings must be sealed by a professional engineer licenced to practice in Yukon.

5.6 If a licence is issued, it may contain a requirement to submit to the Board a detailed construction quality assurance/quality control manual before beginning the construction of structures or facilities. The manual should be designed to ensure that construction materials and methods conform to the designs and specifications for the project, as well as generally accepted practices, and that proper documentation of construction is maintained. All construction monitoring should be carried out by professional engineers licenced to practice in Yukon.

Attachment: Information Sheet for Quartz Mining Undertakings

Yukon Water Board
106-419 Range Rd. Whitehorse YT Y1A 3V1
Phone (867) 456-3980 Fax (867) 456-3890
email: ytwb@polarcom.com

Information Sheet for Quartz Mining Undertakings

Notes to Applicant:
This information sheet must be accompanied by a completed Schedule IV and the applicable fees.

This information sheet is intended to apply only to new or renewal applications. If you are applying to amend an existing licence, you are required to provide a letter indicating precisely the nature of the amendment, the licence sections for which amendment is requested, the proposed amendment wording and the rationale for the amendment.

In addition to the information requested in this form, please refer to Section 5 of the *Waters Regulation* and the Board's *Licensing Guidelines for Type A Quartz Mining Undertakings* to ensure that your application contains all of the required information.

The information provided in this form should reference relevant page numbers of any supporting reports submitted with your application. If insufficient space is provided in this form, or where no space is provided, please attach the required information using the same section titles and numbers as listed in this form.

If more than one licenceable activity or facility is proposed (e.g. multiple water sources, waste deposits, dams, water crossings, etc.), the required information should be presented for each activity or facility.

All design drawings submitted as part of the application must be sealed by a Professional Engineer licenced to practice in the Yukon. Drawings shall be to at least a preliminary design level as described in *the Licensing Guidelines for Type A Quartz Mining Undertakings* but may be labelled "Not for Construction".

An environmental assessment of this application, as required by *the Environmental Assessment Act ("EAA")* will be carried out by applicable Responsible Authorities as defined in *EAA*.

A. GENERAL INFORMATION

1. Name of Applicant: _____

2. Are you applying for a Type A Licence or a Type B Licence? Type A ( ) Type B ( )

3. If you are applying for a Type B Licence, confirm that every aspect of your proposed undertaking does not exceed the licensing criteria specified in Column III of Schedule VII of the *Waters Regulation*.

4. Name of Waterbody(ies): _____

5. Tributary of: _____

6. a) National Topographical System (NTS) 1:50,000 scale Map Sheet Number(s):

   _____

   b) Indicate your project location on a 1:50,000 topographical map, or part thereof. Please ensure that the map sheet number is clearly indicated, selected UTM grid lines are labelled and the UTM zone is indicated.

   c) Attach a copy of the claim map for the project area and outline your claims.

7. Provide map co-ordinates for the project. If the project covers an area, provide the co-ordinates for a box that includes the entire project as well as the co-ordinates of the centre of the project area.

   Minimum Latitude _____ Maximum Latitude _____

   Minimum Longitude _____ Maximum Longitude _____

   Centre Latitude _____ Centre Longitude _____

8. Nearest Community: _____

9. Name of Highway and Kilometre Location: _____

10. In which First Nation Traditional Territory (or Territories) is your project located?

_____

11. Is your project located on or near First Nation Settlement Land? Yes ( ) No ( )

    Will water flowing from your project flow on or adjacent to First Nation Settlement Land? Yes ( ) No ( )

    If so, provide details and attach a map showing the Settlement Lands in relation to your project.

12. Have you contacted the First Nation(s) regarding your project? Yes ( ) No ( )

    If so, provide details.

13. Are there any existing licences or pre-existing applicants whose use of water may be affected by your project? Yes ( ) No ( )

    If so, provide information about who they are and any contacts that you have made with them.

14. Are there any other surface water or groundwater users that might be affected by your project?

    Yes ( ) No ( )

    If YES, identify the other users and describe how they will or may be affected.

15. Does the undertaking require any other permits (e.g. land use permit, quarry permit, timber permit, etc.)?

    Yes ( ) No ( ) If YES, specify the type of permit and it's status.

_____

_____

B. PROJECT DESCRIPTION

16. Provide a general description of the project.

17. Is this a new undertaking or a reactivation of a previous operation?

_____

_____

18. Indicate the status of the mine and/or mill (or other relevant processing facility) on the date of the application:

	Mine	Mill
In Design		
Under Construction		
In Operation		
Temporarily Closed		
Permanently Closed		

19. If a change in the status of the mine or the mill is expected, please indicate the proposed date of such change(s).

20. Indicate the proposed operating schedule:

	Mine	Mill
Hours per day		
Days per week		
Weeks per year		
Number and length of shifts		
Number of workers on site		

21. Attach an overall project layout plan at a scale not less detailed than 1:5000 showing the locations of all of the main components of the project, including but not limited to the mining claims, mine, mill, rock dump(s), ore stockpile(s), dam(s), tailings area(s), access road(s), camp(s), water supply source(s), waste discharge(s) and any other facilities proposed to be licenced through this application. Indicate any Settlement Land and the location of other users identified in Part A if they are within the area of the map.

22. Describe the type(s) of mining operation(s) proposed (i.e. conventional underground, conventional open pit, combined conventional underground and open pit, strip mining, etc.)

23. Specify the proposed milling rate in tonnes of ore per day: _____

_____

24. Describe the proposed milling and processing operation, including methods, equipment, reagents, etc. Provide a flow chart of the operation.

25. Generally characterize the project by providing at least the following information:

a) Topographic maps: copies of the most recent and largest scale (up to 1:2000) topographic maps available, showing where the mine, mill, tailings and other related facilities will be located.

b) Soil maps: copies of the most recent and largest scale (up to 1:2000) soil maps available of the project area complete with legends and explanations.

c) Geologic maps: copies of the most recent and largest scale (up to 1:2000) geologic maps available of the project area complete with legends and explanations.

d) Climate: climatological information, including precipitation and evaporation data for the project area.

e) Hydrology: hydrologic information for the project area, including peak flows, average flows, seasonal flows, flood flows and their return periods, flow patterns, seasonal water quality and quantity, and stream sediment data.

f) Information pertaining to groundwater in the project area, including location, flow direction(s) and quality.

g) Information pertaining to the distribution and nature of permafrost in the project area, including any areas where your assessments indicate the potential existence of ice-rich, thaw unstable permafrost.

C. GEOLOGY AND GEOCHEMISTRY

26. Describe the physical nature of the ore body(ies), including location, known dimensions and approximate shape:

27. Describe the country rock in the vicinity of the ore body, paying particular attention to any rocks that will be excavated during mining or will remain in pit walls or workings.

28. List, in order of importance, the ore minerals of the deposit:

	Mineral %	%		Mineral %	%
1.			4.		
2.			5.		
3.			6.		

29. List, in order of importance, the individual gangue minerals that occur within the ore body:

	Mineral %	%		Mineral %	%
1.			4.		
2.			5.		
3.			6.		

30. Are pyrite and/or pyrrohotite present in the ore body: Yes ( ) No ( )

If YES, indicate the amount of each:

pyrite: _____ % pyrrhotite: _____ % pyrite-pyrrohotite mix: _____ %

31. Is arsenopyrite present in the ore body? Yes ( ) No ( )

If YES, indicate the amount of arsenopyrite: _____ %

32. Is there a potential for acid rock drainage to occur? Yes ( ) No ( )

If YES, describe the location, extent and degree of any anticipated acid rock drainage, including from waste rock, and the methods proposed to be used to minimize or mitigate any significant adverse environmental impacts.

D. USES

33. Does the project include Direct Water Use? Yes ( ) No ( )

If YES, attach the following information for each source:

a) the acquisition rate in cubic metres per day and cubic metres per year.

b) a description of the location the water source(s). If the source is groundwater, attach well logs.

c) the water intake method.

d) details of any screening to exclude fish.

e) the location and design of any water storage facility, if applicable, and the water storage volume in cubic metres.

f) streamflow data in cubic metres per second for the water supply source, including:

i) Mean Annual Flow
ii) Mean Seasonal Flow
iii) Minimum Summer Flow
iv) Minimum Annual Flow
v) Mean Annual Flood
vi) Maximum Summer Flood
vii) Mean Summer Flood

34. Does the project include Construction of a Watercourse Crossing?

Yes ( ) No ( )

If YES, attach the following information for each crossing:

a) a description of the type of crossing.

b) an explanation of why the crossing is required.

c) the following information for the crossing location:

i) the Design Flood Flow in cubic metres per second and its Return Period.
ii) the Mean Seasonal Flow in cubic metres per second.
iii) an explanation of the rationale for the selected Design Flood Flow and its Return Period.
iv) a description of the streambed material, streambank material and streambank vegetation.
v) a description of proposed sediment control measures.
vi) design drawings in plan and profile.
vii) a description of the construction methods, schedule, quality assurance/quality control measures, and inspection and maintenance procedures and schedule proposed to be used.

35. Does the project include Watercourse Training? Yes ( ) No ( )
(includes channel and/or bank alterations, watercourse infilling, spurs, docks, culverts, erosion control, rip-rap, etc.)

If YES, attach the following information for each proposed training work:

a) a description of the type of watercourse training proposed.

b) an explanation of why the training is required.

c) the following information for the watercourse training location:

i) the Design Flood Flow in cubic metres per second and its Return Period.
ii) the Mean Seasonal Flow in cubic metres per second.
iii) an explanation of the rationale for the selected Design Flood Flow and its Return Period.
iv) a description of the streambed material, streambank material, and streambank vegetation.
v) a description of the source, size, and composition of any material to be used for the training and the quantity of material to be either placed into or removed from the watercourse.
vi) a description of proposed sediment control measures
vii) design drawings in plan and profile.
viii) a description of the construction methods, schedule, quality assurance/quality control measures, and inspection and maintenance procedures and schedule proposed to be used.

36. Does the project include Diversions? Yes ( ) No ( )
(includes dikes and other structures relating to the diversion)

If YES, attach the following information for each diversion and related structure:

a) a description of the proposed diversion or structure.

b) an explanation of the reason for the diversion or structure.

c) information on the length and gradient of the existing channel and of the proposed diversion.

d) the following information for the diversion:

i) the Design Flood Flow in cubic metres per second and its Return Period.
ii) the Mean Seasonal Flow in cubic metres per second.
iii) an explanation of the rationale for the selected Design Flood Flow and its Return Period.
iv) design drawings in plan and profile.

v) a description of the construction methods, schedule, quality assurance/quality control measures, and inspection and maintenance procedures and schedule proposed to be used.

37. Does the project include Waste Rock Dumps or Ore/Concentrate Storage?

Yes ( ) No ( )

If YES, attach the following information for each contiguous dump:

a) a description of the dump, including location and extent, topography, soil and rock conditions (provide test pit/drill hole logs and laboratory test results), permafrost conditions, geologic and hydrologic characteristics, rock types and amounts to be placed in the dump, physical and chemical quality of rock to be placed in the dump, and the quantity and quality of surface runoff and seepage through the dump to surface water and groundwater.

b) a description of the methods proposed to be used to ensure stability of the dump and avoid, minimize or mitigate significant adverse environmental impacts, including, but not limited to, site preparation, methods of rock placement, operating and final slopes, caps and crowns, seepage collection or interception ditches, sediment control measures, revegetation/reclamation measures, and monitoring of stability and seepage.

c) design drawings in plan and profile.

d) a description of the construction methods, schedule, quality assurance/quality control measures, and inspection and maintenance procedures and schedule proposed to be used.

38. Does the project include Dams, Spillways, Cofferdams or Dikes? Yes ( ) No ( )

If YES, attach the following information for each structure:

a) a description of the structure and its purpose.

b) a description of the site conditions, including the location, topography, geologic and hydrologic characteristics, permafrost conditions, and soil and rock conditions (provide test pit/drill hole logs and laboratory test results).

c) a description of the type and composition of the material to be used in the construction of the structure.

d) design drawings in plan and profile.

e) a description of the construction methods, schedule, quality assurance/quality control measures, and inspection and maintenance procedures and schedule proposed to be used.

f) in the case of a dam, details of the seismic design parameters and confirmation that the structure is designed to withstand the Maximum Credible Earthquake.

g) in the case of a spillway, details of the hydraulic design parameters and confirmation that the structure is designed to pass the Probable Maximum Flood.

h) If the structure creates a reservoir in a natural watercourse, attach drawings of the reservoir in plan and profile and show representative cross sections. Identify the size of the drainage basin upstream of the reservoir and provide a topographic plan showing the drainage area boundary. Indicate the number of hectares to be flooded, the surface area of the reservoir at full supply level, the total storage capacity of the reservoir, and details of any shoreline protection proposed.

39. Does the project include the Deposit of Solid or Liquid Waste? Yes ( ) No ( )

(Note: This includes all wastes as defined in Section 2 of the *Waters Act* that have the potential to alter or degrade surface or groundwater. Wastes include but are not limited to tailings, milling residues, runoff from mine workings and tailings, discharges from workings, explosives residues, debris, domestic sewage, sediment, etc, whether treated or not.)

If YES, attach the following information for each liquid waste:

a) the type and quantity of waste proposed to be deposited and the reason for the deposit.

b) in the case of a liquid waste, the concentration of the waste proposed to be deposited.

c) in the case of a solid waste, the geochemical characteristics of the waste.

d) the location, rate, timing, frequency and duration of the deposit.

e) the baseline surface and groundwater quality at the location of the proposed discharge.

f) the potential qualitative and quantitative effects that the deposit may have on any watercourse and/or surface water and/or groundwater.

g) the proposed methods for collecting, storing, treating and discharging the waste, and the volumes of any waste storage systems.

h) a description of the construction methods, schedule, quality assurance/quality control measures, and inspection and maintenance procedures and schedule proposed to be used for any waste treatment/storage/discharge facilities.

i) a description and justification of the standards proposed to be applied to any discharges of waste to the receiving environment.

E. HAZARDOUS MATERIALS AND SPILL CONTINGENCY

40. Does the project include the Handling or Storage of Petroleum Products or Hazardous Materials? Yes ( ) No ( )

If YES, provide the following information:

a) a plan for the safe handling, storage, and disposal of petroleum products or hazardous materials.

b) a description of equipment to be kept available for spill response or other emergency and it's location, and a description of proposed training programs for workers.

c) a contingency plan for the containment and clean-up in the event of a spill.

F. EMERGENCY RESPONSE

41. Provide an emergency response plan that includes mechanisms and processes for addressing potential or actual failures of structures, equipment and material stockpiles, and programs for appropriate training to workers.

G. WATER BALANCE MODEL

42. Provide the analysis and results of a detailed water balance model for the project, including all assumptions, calculations and findings, including wet and dry events modelled.

H. WATER QUALITY MODEL

43. Provide the analysis and results of a predictive water quality model for the project.

I. PROJECT EFFECTS

44. Provide a description of any potential impacts to fish and fish habitat.

45. Provide a description of plans to mitigate any effects on fish resources.

46. Provide a description of plans for compensation of any fish habitat lost due to the project.

47. Provide a description of wildlife uses in the project area including sport hunting, subsistence hunting, trapping, and non-consumptive uses.

48. Provide a description of plans to mitigate any effects on wildlife resources due to the project.

49. Provide a description of plans to mitigate any damage to plant cover and topsoil.

50. Provide a detailed description of any potential impacts to water quality, quantity and/or seasonal rate of flow, and any mitigative measures included in the project design.

51. Are there anticipated to be any potential impacts to traditional uses and water rights of a First Nation as described in Section 14.8.0, or of a Yukon Indian Person as described in Section 14.9.0 of the *Umbrella Final Agreement*? Yes ( ) No ( )

    If YES, provide an explanation of how they have been considered and what mitigative measures have been included in the project design.

52. Provide an explanation of how any existing water use licensees or pre-existing applicants, whose use of water may be affected by your project, have been considered and what mitigative measures have been included in the project design.

53. Are there any trapline concession holders in the area of your project? Yes ( ) No ( )

    If YES, provide information about who they are, what contacts that you have made with them, how they have been considered in the project development, and what mitigative measures have been included in the project design.

54. Are there any outfitters in the area of your project? Yes ( ) No ( )

    If YES, provide information about who they are, what contacts that you have made with them, how they have been considered in the project development, and what mitigative measures have been included in the project design.

J. DECOMMISSIONING PLANS

55. What is the expected life of the project?

56. Provide a detailed description of decommissioning measures to be taken when the project is either temporarily or permanently abandoned and describe how project facilities will be removed and the site reclaimed.

57. Provide a description of proposed monitoring and inspection procedures to be followed during either temporary or permanent decommissioning.

K. MONITORING PLANS

58. Provide a detailed description of the methods, procedures, standards, systems, networks and schedules proposed to be used to monitor the performance of the project facilities/systems and their impact on the environment.

OFFICERS OF THE COMPANY/CORPORATION

This page must only be completed if the applicant is a corporation, limited company, or other business entity. Non profit organizations should provide proof that they are a registered society or organisation in the Yukon.

Before issuing a water licence in the name of a corporation, limited company or other business entity, the Yukon Water Board will require that the following declaration be completed:

I, _____ certify that (name of business entity) _____ is incorporated or registered pursuant to the *Business Corporations Act* Of The Yukon Territory or is registered in the province of _____.

The officers of the company are:

Name (Please Print):	Title
_____	_____
_____	_____
_____	_____
_____	_____

_____ _____

Signature Title

_____

Date

Please Note:If the above information is not completed, the Board will consider the application to be in the name of the individual who signed the Schedule IV.

In addition to this declaration, proof that the business entity is allowed to do business in the Yukon is required. Please attach an annual return, Form 1-04, or certificate of Registration.

Yukon
Water Board

Office des eaux
du Yukon

July 25, 2003

Shannon Glenn, Manager
Deloitte & Touche
1900 - 79 Wellington St. W
PO Box 29 TD Centre
Toronto, ON M5K 1B9

Murray J. Letich
Miller Thomson
202 - 208 Main St
Whitehorse, YT Y1A 2A9

RE: PUBLIC HEARING, WATER USE APPLICATION QZ03-059
ANVIL RANGE - RENEWAL OF QZ95-003 (GRUM) & IN89-002 (FARO)

The Yukon Water Board has determined that the public hearing into this application will take place on October 27, 2003. The deadline for submission of interventions will be twelve noon on September 26, 3003.

Enclosed with this letter is a copy of the current exhibit list, which includes the information that you submitted on July 15, 2003.

I will contact you again in the near future regarding the location of the hearing.

Judi White, Manager
Yukon Water Board

cc file QZ03-059
Distribution List, as of July 25/03

/q59/q59hearingdate

Suite 106, 419 Range Road, Whitehorse, Yukon Y1A 3V1 Ph: 867-456-3980 Fax: 867-456-3890
419, chemin Range, bureau 106, Whitehorse (Yukon) Y1A 3V1 Tél. : 867-456-3980 Téléc. : 867-456-3890
E-mail: ytwb@polarcom.com *Courriel: ytwb@polarcom.com*

1. APPLICATION

1.1 Schedule IV and letter, 16.05.03
1.2 Proposed Licence
1.3 Concordance Table, Licences QZ95-003 and IN89-002
1.4 Water Licence Renewal Report, GLL 23-376, May, 2003
1.5 Letter, Information Sheet & Excerpts from EA Report, 15.07.03

1.5 A First Nation EAR Consultation
1.5 B Surficial Geology and Landforms
1.5 C Drawings:
Regional Geology - figure 11
Faro Orebody - figure 12
Vangorda Orebody - figure 13
Grum Orebody - figure 14
1.5.D Environmental And Social Setting, Meteorology and Terrain
1.5.E Hydrology
1.5.F Hydrogeology
1.5.G Soils/Terrain
1.5.H Geology
1.5.I Rose Creek Tailing Facility
1.5.J Surface Water Quality
1.5.K List of Emergency Response Equipment
1.5.L Contaminant Loading
1.5.M Regulatory and Public Consultation

6. RESPONSES TO INTERVENTIONS

7. CURRENT/PREVIOUS WATER USE LICENCE(S)

7.1 Water Use Licence IN89-002
7.2 Water Use Licence QZ95-003

8. OTHER
9. ENVIRONMENTAL ASSESSMENT
10. DECISION
11. TRANSCRIPT OF PUBLIC HEARING
12. VISUAL AIDS (public hearing)

Applicant Shannon Glenn, Manager Deloitte & Touche 1900 - 79 Wellington St. W PO Box 29 TD Centre Toronto, ON M5K 1B9 Phone: 416 601 6454 Fax: 416 601 5901 E-Mail: sglenn@deloitte.ca	Applicant's Agent Murray J. Letich Miller Thomson 202 - 208 Main St Whitehorse, YT Y1A 2A9 Phone: 867 633 2080 Fax: 867 667 7665 email: mleitch@millerthomson.ca
Chief Jack Ceaser Ross River Dena Council General Delivery Ross River, YT Y0B 1S0 Phone: 867 969 2277 Fax: 867 969 2405 email: rrdlands@yknet.ca	Chief Lucy McGinty Selkirk First Nation Box 40 Pelly Crossing, YT Y0B 1P0 Phone: 867 537 3331 Fax: 867 537 3902 email: greenf@selkirkfn.com
David Johnny, Chair Selkirk Renewable Resource Council Box 32 Pelly Crossing, YT Y0B 1P0 phone: 867 537 3937 fax: 867 537 3939	David Power Town of Faro Box 580 Faro, YT Y0B 1K0 phone: 867 994 3154 fax: 867 994 2728 email: dpower@yknet.ca
Leslie Gomm, A-310 Manager, Project Assessment ECO Government of Yukon Box 2703 Whitehorse, YT Y1A 2C5 phone: 456 3865	Vic Enns Environment Canada Mile 917.6B Alaska Hwy Whitehorse, YT Y1A 5V1 Phone: 867 667 3403 Fax: 867 667 7962 E-Mail: victor.enns@ec.gc.ca
Dianne Brent, K-6 Energy Mines & Resources Government of Yukon Box 2703 Whitehorse, YT Y1A 2C6 Phone: 867 667 5471 Fax: 867 667 8601 email: Diane.Brent@gov.yk.ca	Jon Bowen, Manager V-8 Environmental Assessment Government of Yukon Box 2703 Whitehorse, YT Y1A 2C6 phone: 867 6675409 fax: 867 667 3641 email: Jon.Bowen@gov.yk.ca

Bill Slater, V-310 Water Resources Government of Yukon Box 2703 Whitehorse, YT Y1A 2C6 phone: 867 667 3147 fax: 867 667 3195 email: Bill.Slater@gov.yk.ca	Aaron Foos, V-5C Fisheries Management Government of Yukon Box 2703 Whitehorse, YT Y1A 2C6 Phone: 867 667 3715 Fax: 867 393 6263 email: Aaron.Foos@gov.yk.ca
Ruth Gotthardt, L2-A Tourism & Culture Government of Yukon Box 2703 Whitehorse, YT Y1A 2C6 Phone: 867 667 5983 Fax: 867 667 5377 email: Ruth.Gotthardt@gov.yk.ca	A/Chief, Habitat & Enhancement Fisheries & Oceans Canada 100 - 419 Range Rd Whitehorse, YT Y1A 3V1 Phone: 867 393 6723 Fax: 867 393 6737
Christine Cleghorn, Executive Director Yukon Conservation Society 302 Hawkins Street Whitehorse, YT Y1A 1X6 Phone: 867 668 5678 Fax: 867 668 6637 E-Mail: mining@ycs.yk.ca	
Lorelie Smith, Chair Yukon Salmon Committee 100 - 400 Range Rd Whitehorse, YT Y1A 3V1 phone: 867 393 6725 salmon@yknet.ca	Canadian Parks & Wilderness Society Box 31095 Whitehorse, YT Y1A 5P7 cpaws@cpawsyukon.org
Dan Cornett Access Consulting Group 204-D Strickland St. Whitehorse, YT Y1A 2J8 phone: 867 668 6463 fax: 867 667 6680 email: dan@accessconsulting.ca	

MILLER THOMSON LLP
Barristers & Solicitors, Patent & Trade Mark Agents

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FAX TRANSMISSION COVER

To:	**Wes Treleaven / Shannon Glenn** Town of Faro	**Fax:**	**416.601.5902**
From:	Murray J. Leitch 867.633.2075 mleitch@millerthomson.ca	**File:**	59135.0001
Date:	August 11, 2003	**Pages** (including this cover):	3

If you have any problems with this transmission, please contact:
Diane Huber at 867.633.2080

MESSAGE

Re: Deloitte & Touche Inc. in its capacity as Interim Receiver of Anvil Range Mining Corporation ("Anvil Range") – Application to Consolidate and Renew Existing Licences QZ95-003 and IN89-002

Please see August 6, 2003 letter to Judi White.

NOTICE
This fax is intended for use only by the persons to whom it is specifically addressed above and should not be read by, or delivered to, any other person. This fax may contain privileged or confidential information. If you have received this fax in error, please notify us immediately by calling the sender's direct line above (collect if necessary). We thank you in advance for your co-operation and assistance.

MILLER THOMSON LLP

Barristers & Solicitors, Patent & Trade Mark Agents

202-208 Main Street
Whitehorse, YT, Canada Y1A 2A9
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August 6, 2003

Murray J. Leitch
Associate Counsel
Direct Line: 867.633.2075
Direct Fax: 867.667.7665
mleitch@millerthomson.ca

File: 059135.0001

DELIVERED

Yukon Water Board
#106 - 419 Range Road
Whitehorse, Yukon
Y1A 3V1

COPY

Attention: Judi White

Dear Sirs/Mesdames:

Re: Deloitte & Touche Inc. in its capacity as Interim Receiver of Anvil Range Mining Corporation ("Anvil Range") – Application to Consolidate and Renew Existing Licences QZ95-003 and IN89-002

We acknowledge receipt of your letter addressed to Shannon Glenn and the writer dated July 25, 2003 with respect to the date for the public hearing in this matter. We understand that the Town of Faro would like the public hearing to be held in Faro and the Interim Receiver is supportive of the Town's request provided this does not delay the date of the hearing. The Interim Receiver appreciates that holding the hearing in Faro would be of benefit to the communities in the area.

We trust you find the foregoing in order and we look forward to hearing from you further in this matter.

Yours truly,

MILLER THOMSON LLP

Per: COPY

Murray J. Leitch

MJL/dh
Enclosure

c: ✓Deloitte & Touche Inc.
Attention: Wes Treleaven and Shannon Glenn

Gartner Lee Limited
Attention: Eric J. Denholm

Department of Indian Affairs and Northern Development
Attention: Dave Sherstone

Government of Yukon
Attention: Marg Crombie

Town of Faro
Attention: David Power

Yukon Water Board
Office des eaux du Yukon

August 20, 2003

File: QZ03-059

To: Distribution List (copy attached)

Notice of Receipt of Water Use Application QZ03-059,
Deloitte & Touche, Interim Receivers for Anvil Range,
RENEWAL OF LICENCES IN89-001 & QZ95-003

The Yukon Water Board has received an application from Deloitte & Touche Inc., the interim receivers for Anvil Range, to renew water use licences IN89-001 (Faro Mine) and QZ05-003 (Grum/Vangorda), for a period of five years. The application includes a proposed draft licence, which amalgamates and amends the two current licences, both of which expire at the end of this year.

Please note that this is a different application from QZ03-058 (the Freshwater Dam), and a separate public hearing will be held. It will be very helpful if extra care is taken to ensure that your correspondence to the Board on either application references the correct application number.

The public hearing into this application will take place at the recreation centre in Faro on October 27, 2003. Please note the change in location. The deadline for submission of interventions will be twelve noon on September 26, 2003. Although it is impossible to predict how long any public hearing is going to last, it would be reasonable to expect that this will be more than one day.

Enclosed with this letter are copies of the current exhibit list, the Schedule IV and letter that accompanied the application, the draft licence that has been developed by the applicant (exhibit 1.2) and a letter from the applicant regarding the public hearing location (exhibit 1.6). The Water Licence Renewal Report (exhibit 1.4) and the excerpts from the EA report (exhibit 1.5) are large reports that have likely been widely distributed as part of the Environmental Assessment Process, and are therefore not included with this letter. However, should you want a copy of that report, or any other exhibit, please contact our office (867-456-3980 or YTWB@polarcom.com) and copies will be sent to you immediately. Similarly, the Board's Rules of Procedure have recently been distributed to all parties on the distribution list for the other application, and are not being reproduced at this time, but copies are available at the water board office.

Also enclosed with this letter is a preliminary distribution list. If you want to be removed from this list, or if you want to recommend a party that should be added, please contact our office. The list will be maintained in a preliminary form until September 26. After that, the list will include only those parties who have intervened or who have specifically requested that they remain on the list.

Suite 106, 419 Range Road, Whitehorse, Yukon Y1A 3V1 Ph: 867-456-3980 Fax: 867-456-3890
419, chemin Range, bureau 106, Whitehorse (Yukon) Y1A 3V1 Tél. : 867-456-3980 Téléc. : 867-456-3890
E-mail: ytwb@polarcom.com *Courriel: ytwb@polarcom.com*

An environmental assessment of this application is being conducted by the Government of Yukon, and parties wanting additional information about that process should contact Leslie Gomm, A-310, Manager, Project Assessment, ECO, Government of Yukon, Box 2703, Whitehorse, YT Y1A 2C5, phone: 456-3865.

If you would like additional information about the water board process, please contact our office.

Judi White, Manager
Yukon Water Board

attach: Preliminary Distribution List, as of June 6, 2003
Exhibit List, Aug 11/03 and Exhibits 1.1, 1.2 & 1.6

Applicant Shannon Glenn, Manager Deloitte & Touche 1900 - 79 Wellington St. W PO Box 29 TD Centre Toronto, ON M5K 1B9 Phone: 416 601 6454 Fax: 416 601 5901 E-Mail: sglenn@deloitte.ca	Applicant's Agent Murray J. Leitch Miller Thomson 202 - 208 Main St Whitehorse, YT Y1A 2A9 Phone: 867 633 2080 Fax: 867 667 7665 email: mleitch@millerthomson.ca
Chief Jack Ceaser Ross River Dena Council General Delivery Ross River, YT Y0B 1S0 Phone: 867 969 2277 Fax: 867 969 2405 email: rrdlands@vknet.ca	Chief Lucy McGinty Selkirk First Nation Box 40 Pelly Crossing, YT Y0B 1P0 Phone: 867 537 3331 Fax: 867 537 3902 email: greenf@selkirkfn.com
David Johnny, Chair Selkirk Renewable Resource Council Box 32 Pelly Crossing, YT Y0B 1P0 phone: 867 537 3937 fax: 867 537 3939	David Power Town of Faro Box 580 Faro, YT Y0B 1K0 phone: 867 994 3154 fax: 867 994 2728 email: dpower@vknet.ca
Leslie Gomm, A-310 Manager, Project Assessment ECO Government of Yukon Box 2703 Whitehorse, YT Y1A 2C5 phone: 456 3865	Vic Enns Environment Canada Mile 917.6B Alaska Hwy Whitehorse, YT Y1A 5V1 Phone: 867 667 3403 Fax: . 867 667 7962 E-Mail: victor.enns@ec.gc.ca

Dianne Brent, K-6 Energy Mines & Resources Government of Yukon Box 2703 Whitehorse, YT Y1A 2C6 Phone: 867 667 5471 Fax: 867 667 8601 email: Diane.Brent@gov.yk.ca	Jon Bowen, Manager V-8 Environmental Assessment Government of Yukon Box 2703 Whitehorse, YT Y1A 2C6 phone: 867 6675409 fax: 867 667 3641 email: Jon.Bowen@gov.yk.ca
Bill Slater, V-310 Water Resources Government of Yukon Box 2703 Whitehorse, YT Y1A 2C6 phone: 867 667 3147 fax: 867 667 3195 email: Bill.Slater@gov.yk.ca	Aaron Foos, V-5C Fisheries Management Government of Yukon Box 2703 Whitehorse, YT Y1A 2C6 Phone: 867 667 3715 Fax: 867 393 6263 email: Aaron.Foos@gov.yk.ca
Ruth Gotthardt, L2-A Tourism & Culture Government of Yukon Box 2703 Whitehorse, YT Y1A 2C6 Phone: 867 667 5983 Fax: 867 667 5377 email: Ruth.Gotthardt@gov.yk.ca	A/Chief, Habitat & Enhancement Fisheries & Oceans Canada 100 - 419 Range Rd Whitehorse, YT Y1A 3V1 Phone: 867 393 6723 Fax: 867 393 6737
Christine Cleghorn, Executive Director Yukon Conservation Society 302 Hawkins Street Whitehorse, YT Y1A 1X6 Phone: 867 668 5678 Fax: 867 668 6637 E-Mail: mining@ycs.yk.ca	

Lorelie Smith, Chair Yukon Salmon Committee 100 - 400 Range Rd Whitehorse, YT Y1A 3V1 phone: 867 393 6725 salmon@yknet.ca	Canadian Parks & Wilderness Society Box 31095 Whitehorse, YT Y1A 5P7 cpaws@cpawsyukon.org
Dan Cornett Access Consulting Group 204-D Strickland St. Whitehorse, YT Y1A 2J8 phone: 867 668 6463 fax: 867 667 6680 email: dan@accessconsulting.ca	

1. APPLICATION

1.1 Schedule IV and letter, 16.05.03
1.2 Proposed Licence
1.3 Concordance Table, Licences QZ95-003 and IN89-002
1.4 Water Licence Renewal Report, GLL 23-376, May, 2003
1.5 Letter, Information Sheet & Excerpts from EA Report, 15.07.03

1.5 A First Nation EAR Consultation
1.5 B Surficial Geology and Landforms
1.5 C Drawings:
Regional Geology - figure 11
Faro Orebody - figure 12
Vangorda Orebody - figure 13
Grum Orebody - figure 14
1.5.D Environmental And Social Setting, Meteorology and Terrain
1.5.E Hydrology
1.5.F Hydrogeology
1.5.G Soils/Terrain
1.5.H Geology
1.5.I Rose Creek Tailing Facility
1.5.J Surface Water Quality
1.5.K List of Emergency Response Equipment
1.5.L Contaminant Loading
1.5.M Regulatory and Public Consultation

1.6 Letter, M. Leitch, Location of Public Hearing, 06.08.03

3. PUBLIC NOTICES

4. CORRESPONDENCE

5. INTERVENTIONS

5.1

6. RESPONSES TO INTERVENTIONS

7. CURRENT/PREVIOUS WATER USE LICENCE(S)

7.1 Water Use Licence IN89-002
7.2 Water Use Licence QZ95-003

8. OTHER

9. ENVIRONMENTAL ASSESSMENT

10. DECISION

11. TRANSCRIPT OF PUBLIC HEARING

12. VISUAL AIDS (public hearing)

Waters Act **Schedule IV Application**

If Amendment or Renewal: Licences# QZ95-003 and IN89-002

APPL No. 2003 MAY 20 AM 9:27

1. NAME: Deloitte & Touche Inc., in its capacity as Interim Receiver of Anvil Range Mining Corporation

2. PERMANENT MAILING ADDRESS: Suite 1900, 79 Wellington Street West, Toronto, Ontario, M5K 1B9 APPL NO. QZ03-059
TELEPHONE: 416.601.4482 FAX: 416.601.6390 EMAIL: wtreleaven@deloitte.ca

3. SEASONAL MAILING ADDRESS (if different from permanent) From _____ to _____
TELEPHONE: FAX:

4. LOCATION OF UNDERTAKING: near Faro Yukon

WATER SOURCES: (a) Rose Creek (QZ95-003), a tributary of the Pelly River; (b) Vangorda Creek (IN89-002); (c) Faro Pit (surface and ground water); (d) Zone II Pit (surface and ground water); (e) Vangorda Pit (surface and ground water); (f) Grum Pit (surface and ground water); (g) Little Creek Dam Pond; and (h) Grum/Vangorda freshwater supply pond.
WASTE DEPOSIT: (a) Rose Creek (QZ95-003) via the Cross Valley Dam Spillway and seepage; and (b) Vangorda Creek (IN89-002) via the Sheep Pad Ponds. (Describe location, attach map, indicate location of waste deposit)

5. QUANTITY OF WATER TO BE USED (DIRECT USE): (a) maximum of 65,465 m^3/day from Rose Creek including the Faro Pit and the Zone II Pit; and (b) 22,900 m^3/day from Vangorda Creek including the Vangorda Pit, the Grum Pit, the Grum/Vangorda freshwater supply pond, andthe Little Creek Dam Pond.

6. Proposed Expiry Date: 31 December 2008.

7. TYPE OF UNDERTAKING		8. WATER USE:	
Industrial		To obtain water	X
Placer Mining		To divert water	X
Quartz Mining	X	To store/alter flow of water	X
Municipal		To modify the bed or bank of a watercourse	X
Power		To cross a watercourse	X
Agriculture		To deposit waste	X
Conservation		Other (attach description)	
Recreational			

Miscellaneous (attach description): _____

The Applicant seeks a consolidation of the existing two water licences into one licence for care and maintenance of the site expiring 31 December 2008 in the form attached as Appendix 1 incorporating the amendments detailed in the Table of Concordance attached as Appendix 2.

9. OTHER PERSONS OR PROPERTIES AFFECTED BY THIS UNDERTAKING (attach list): not applicable

10. NAME, ADDRESS, TELEPHONE AND FAX NUMBER OF AGENT OR ALTERNATE CONTACT:

Principal contact: Murray J. Leitch, Miller Thomson LLP, Suite 202, 208 Main Street, Whitehorse, Yukon, Y1A 2A9
Technical matters: Eric Denholm, Gartner Lee Limited, Suite C, 206 Lowe Street, Whitehorse, Yukon, Y1A 1W6

Signature: _____ Date: May 16, 2003
Murray J. Leitch, Solicitor for the Applicant Licensee

FOR OFFICE USE ONLY

Application Fee Amount: 30.00
Water Use Deposit Amount: 678.13
MLUR Amount: N/A

Receipt No.: 561700
Receipt No.: 561760
Receipt No.: _____ MLUR No.: _____

YTWB

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EXHIBIT 1.1

MAY 20 2003

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MILLER THOMSON LLP
Barristers & Solicitors, Patent & Trade Mark Agents

Miller Thomson LLP is an Ontario Limited Liability Partnership

202-208 Main Street
Whitehorse, YT, Canada Y1A 2A9
Tel: 867.633.2080
Fax: 867.667.7665
www.millerthomson.com

2003 MAY 20 AM 9:25
NO. QZ03-059
2 10 VANCOUVER
FRIEND

May 16, 2003

DELIVERED

Yukon Water Board
#106 - 419 Range Road
Whitehorse, Yukon
Y1A 3V1

Murray J. Leitch
Associate Counsel
Direct Line: 867.633.2075
Direct Fax: 867.667.7665
mleitch@millerthomson.ca

File: 59135.0001

Attention: Judi White

Dear Sirs/Mesdames:

Re: Deloitte & Touche Inc. in its capacity as Interim Receiver of Anvil Range Mining Corporation ("Anvil Range") – Application to Consolidate and Renew Existing Licences QZ95-003 and IN89-002

As you are aware, we have been retained by Deloitte & Touche Inc., Anvil Range's Interim Receiver (the "Interim Receiver").

We enclose, on behalf of the Interim Receiver, an application to consolidate, amend and renew the existing licences, QZ95-003 and IN89-002, to allow the Interim Receiver to continue its care and maintenance activities on site until December 31, 2008 (the proposed expiry date of the new renewed, amended and consolidated licence).

As we advised you in our letter dated March 18, 2003, the federal Government has now recognized that the Anvil Range Mine will not reopen and has established a Type II Mines Project Office (the "Project Team") to prepare a Final Closure and Reclamation Plan (the "FCRP"). The proposed term of the licence was selected to allow the Project Team sufficient time to prepare, file and have permitted the FCRP. Accordingly, by this application, the Interim Receiver requests that certain obligations under the existing licences that arise upon closure be set aside or placed in abeyance during the renewal term.

The application comprises the following documents:

1. One bound copy and one unbound copy of Schedule IV Application under the Yukon *Waters Act* with the form of the proposed renewed, amended and consolidated licence attached as Appendix 1 and a Table of Concordance, *inter alia*, detailing the amendments attached as Appendix 2 (and a disk containing electronic versions of these documents); and

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2. One bound copy and one unbound copy of a May 2003 report prepared jointly by the Interim Receiver and Gartner Lee Limited titled "Water License Renewal Application Report" (the "Report").

We hope and expect that providing the form of the proposed licence will help to clarify for the Board and interested parties exactly what licence terms are being sought by the Interim Receiver and that this will facilitate focused and fruitful discussions between the Interim Receiver and interested parties both before and during the hearing.

As the existing licences are scheduled to expire December 31, 2003, we also hope that providing the form of the proposed licence may expedite the process.

This application has been made on the basis that the property is a quartz mining undertaking. As noted above, this mine will not re-open under the supervision of the Interim Receiver so, arguably, the property is no longer a quartz mining undertaking. If the Board feels that this application should more properly be treated as a licence for a miscellaneous undertaking, the Interim Receiver would be indifferent to such a change in classification.

Similarly, the Interim Receiver has, on the proposed licence, left open the designation of the proposed licence type as, arguably, if the licence was to be as a miscellaneous undertaking licence, it would be a Type B licence. The Interim Receiver appreciates that even if the Board views the proposed licence as a Type B licence for a miscellaneous undertaking that a public hearing would likely be ordered.

The Yukon EAA and federal CEAA Screening processes with respect to this application are ongoing. The Responsible Authorities have been identified and they have agreed on the scope of the project and the assessment. The Interim Receiver submitted an Environmental Assessment Report on April 30, 2003 to the Executive Council Office, Environmental Assessment Unit.

Some proposed activities, which are being screened in the environmental assessment, may not require a water licence but another type of permit. Examples include the proposed bioremediation cell and the proposed landfill. Nonetheless, for ease of reference, all proposed activities which are being evaluated in the environmental assessment have been included in the Report.

Any questions you have of a technical nature that arise during your review should be directed to Eric J. Denholm of Gartner Lee Limited, telephone: (867) 873-5808, telecopier: (867) 873-4453, email: edenholm@gartnerlee.com.

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We trust that you find the foregoing in order and we look forward to hearing from you in the near future regarding this application and the proposed hearing dates.

Yours truly,

MILLER THOMSON LLP

Per:

Murray J. Leitch
MJL/az

c: Deloitte & Touche Inc.
Attention: Wes Treleaven and Shannon Glenn

Gartner Lee Limited
Attention: Eric J. Denholm

Department of Indian Affairs and Northern Development
Attention: Dave Sherstone

Government of Yukon
Attention: Marg Crombie

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EXHIBIT 1.1

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APPENDIX 1

YUKON TERRITORY WATER BOARD

Pursuant to the Yukon *Waters Act* and Regulations, the Yukon Territory Water Board hereby grants a Type ____ Water Use Licence for a quartz mining undertaking to:

LICENCE NUMBER: _____

LICENCE TYPE: _____ **UNDERTAKING:** QUARTZ MINING

WATER SOURCES: (a) Rose Creek (QZ95-003), a tributary of the Pelly River; (b) Vangorda Creek (IN89-002); (c) Faro Pit (surface and ground water); (d) Zone II Pit (surface and ground water); (e) Vangorda Pit (surface and ground water); (f) Grum Pit (surface and ground water); (g) Little Creek Dam Pond; and (h) Grum/Vangorda freshwater supply pond.

QUANTITY OF WATER (Direct Use): (a) maximum of 65,465 m^3/day from Rose Creek including the Faro Pit and the Zone II Pit; and (b) maximum of 22,900 m^3/day from Vangorda Creek including the Vangorda Pit, the Grum Pit, the Grum/Vangorda freshwater supply pond and the Little Creek Dam Pond.

EFFECTIVE DATE: The date upon which the signature of the Government Leader of Yukon is affixed.

EXPIRY DATE: December 31, 2008

This Licence shall be deemed to be an amendment and renewal of water use licences numbers QZ95-003 and IN89-002 and all rights and obligations conferred by water use licences numbers QZ95-003 and IN89-002 to the extent contained herein are continued in full force and effect.

This Licence shall be subject to the restrictions and conditions contained herein and to the restrictions contained in the *Waters Act* and Regulations made thereunder. Where there is a discrepancy between the application and the terms of this Licence, the terms of this Licence shall prevail.

Dated this _____day of _____, 2003

YUKON TERRITORY WATER BOARD

_____
Witness

_____
Chair

Dated this ___ day of _____, 2003

Approved by:

_____
Witness

_____
Government Leader, Yukon

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PART A – GENERAL CONDITIONS

Definitions:

1. (a) "Act" means Yukon *Waters Act* and any amendments thereto.
(b) "Regulations" means the Regulations made under the Act.
(c) "Board" means the Yukon Water Board.
(d) "Inspector" means any person designated as an Inspector under the Act.

[QZ95-003, Part A, Section 1; IN89-002, Part A, Section 1]

Representations, Warranties , and Undertakings

2. The board has relied on the representation, warranties and undertaking provided by the applicant in the material filed as application _____. Such representations, warranties and undertaking, where referenced in this licence are considered by the Board to be a part of the licence, but shall be subject to the terms and conditions of this licence.

[QZ95-003, Part A, Section 2]

Fees

3. The licensee shall pay the water use fees prescribed in the Regulations, annually in advance, on the first day of January in each year of the term of this licence.

[QZ95-003, Part A, Section 3; IN89-002, Part A, Section 2]

Deleterious Substances

4. Subject to the provisions of this licence, deleterious substances shall be used, transported, stored and disposed of in such a manner that they are not deposited in, or allowed to be deposited in, any waters.

[QZ95-003, Part A, Section 4]

Other laws

5. No term of this licence limits the application of any other Federal or Territorial Law

[QZ95-003, Part A, Section 5; IN89-002, Part A, Section 12]

Security

6. The Licensee shall maintain the existing security in the amount of One million, four hundred and forty three thousand and seven hundred ($1,443,700.00) dollars. The form of the security shall be in accordance with the Regulations.

[QZ95-0003, Part A, Section 6;IN89-0002, Part A, Section 3

7. The Licensee shall make best efforts to transfer all monies currently in the Trusteed Environmental Fund that was attached as Schedule E to water use licence IN89-001 (less

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applicable taxes, penalties and interest, if any) into the Reclamation Security Trust Fund that was established by the Reclamation Security Agreement that was agreed to by Anvil Range Mining Corporation and Government of Canada on November 8, 1994 (the "RSTF").

[QZ95-003, Part A, Section 7]

8. To help fund final closure and reclamation, the Licensee shall maintain the RSTF.

[new]

Non-Compliance

9. In the event that the Licensee fails to comply with any provision or condition of this licence, the Board may with the approval of the Minister, and subject to the Act, cancel the licence.

[QZ95-003, Part A, Section 8; IN89-002, Part A, Section 5]

Waste Discharge Standards

10. This licence is issued to the Licensee, subject to the conditions contained herein, with respect to the use or return of water, or the depositing or permitting the deposit of waste of any type in any waters or in any place under any conditions where such waste or any other waste that results from the deposit of such waste may enter any waters. However, it is also a condition of granting of this licence to the Licensee that, whenever future regulations are made under the Yukon *Waters Act*, or any other statute imposing conditions relating to the quantity and types of waste that may be deposited that are more stringent that any conditions included in this licence shall be deemed, upon prescription of such Regulations, to be automatically amended to conform with such Regulations.

[QZ95-003, Part A, Section 9;IN89-002, Part A, Section 6]

Correspondence

11. Where any direction, notice, order, or report under this licence is required to be in writing, it shall be given:

(a) to the Licensee if left at or sent by registered mail or faxed to the following addresses:

(i) Deloitte & Touche Inc. in its capacity as interim receiver for Anvil Range Mining Corporation, Suite 1900, 79 Wellington Street West, Toronto, Ontario M5K 1B9, fax (416) 601-6390 Attention: Wes Treleaven; and

(ii) Deloitte & Touche Inc. in its capacity as interim receiver for Anvil Range Mining Corporation, P.O. Bag 1000, Faro Yukon Y0B 1K0, fax (867) 994-2600 Attention: Dana Haggar;

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and shall be deemed to have been given to the Licensee on the day it was left or faxed or seven (7) days after the day it was mailed, as the case may be.

(b) to the Board, if left at or sent by registered mail or faxed to the following address: Yukon Territory Water Board, 106 – 419 Range Road, Whitehorse, Yukon Y1A 3V1, fax (867) 668-3628

and shall be deemed to have been given to the Board on the day it was left or faxed or seven (7) days after the day it was mailed, as the case may be.

(c) The Board or the Licensee may, by notice in writing, change its address for delivery.

[QZ95-003, Part A, Section 10; IN89-002, Part A, Section 7]

Reports

12. Unless otherwise specified in this licence, all reports shall be submitted in an unbound form which is reproducible by standard photocopier and shall be accompanied by five (5) paper copies and by one copy on computer diskette.

[QZ95-003, Part A, Section 11]

13. Water quality monitoring reports shall be submitted in printed form and on computer diskette, in an IBM compatible spreadsheet format.

[QZ95-003, Part A, Section 12]

Annual Reports

14. The Licensee shall submit annual reports to the board. The initial report shall be from the effective date of this licence to December 31, 2004 and shall be submitted to the Board on or before March 1, 2005. Subsequent reports shall be from January 1 to December 31 of each calendar year reported.

[QZ95-003, Part A, Section 13]

15. The Licensee shall, by March 1, 2004 submit annual reports to the Board for the period January 1, 2003 to December 31, 2003 for each of QZ95-003 and IN89-002 each report shall comply with the applicable requirements of water use licences QZ95-003 and IN89-002.

[QZ95-003, Part A, Section 14]

16. The annual report shall include all information required by the Regulations, a summary and an interpretation of any trends or variations in the data, and

(a) both tabular and graphical summaries of all data generated under the requirements of this licence, including an analysis and interpretation by a qualified individual or firm and a discussion of any variances from base line conditions or from previous years;

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(b) a water balance for each mine site by source;

(c) a detailed record of any major maintenance work carried out on each mine site or any other aspect of works on the property which may have an impact on water;

(d) any other details on water use or waste disposal requested by the Board.

[QZ95-003, Part A, Section 15]

Spills and Unauthorized Discharges

17. The Licensee shall immediately contact the 24-hour Yukon Spill Report number (867) 667-7244, should a spill or an unauthorized discharge occur. A detailed written report on any such event, including dates, quantities, parameters, causes and other relevant details and explanations, shall be submitted to the Board not later than fifteen (15) days after its occurrence.

[QZ95-003, Part A, Section 16; IN89-002 Part A, Section 10]

Term of Licence

18. The term of this licence is for the period from the effective date to December 31, 2008.

[QZ95-003, Part A, Section 17; IN89-002, Part A, Section 11]

PART B – OPERATING CONDITIONS

Fresh Water Supply

19. The Licensee may withdraw fresh water from the Grum/Vangorda fresh water supply pond, in a quantity not to exceed 3,000 m^3/day for use in the Grum/Vangorda water treatment plant

[new]

Water Pumping

20. The Licensee shall immediately commence pumping water from the Faro Main Pit if the water level in the pit rises to 1,178.35 mine datum metres (3,866 mine datum feet).

[QZ95-003, Part B, Section 19]

21. The Licensee shall immediately commence pumping water from the Faro Zone II Pit if the water level in the pit rises to 50.00 metres below ground.

[new]

22. The Licensee shall immediately commence pumping water from the Vangorda Pit if the water level in the pit rises to 1,092.00 metres above sea level.

[new]

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23. The Licensee shall immediately commence pumping water from the Little Creek Dam as necessary to maintain the water level at least 1 metre below the overflow.

[new]

Waste Discharge

24. Without restricting the generality of the definition of "waste" in the Act, "waste discharge" in this licence includes the effluent, seepage, groundwater seepage, and surface drainage from tailings ponds and pits entering the receiving waters.

[QZ95-003, Part B, Section 21]

25. No waste discharge shall exhibit constituents or characteristics exceeding the following limits:

Suspended Solids	-	not greater than 15 mg/l
pH	-	not less than 6.5 pH units
Colour	-	not greater than 20 Pt-Co units
Turbidity	-	not greater than 15 NTU

[QZ95-003 Part B, Section 22; IN89-002, Part C, Section 2 (a)]

26. No waste discharge shall contain floating solids.

[QZ95-003 Part B, Section 23; IN89-002, Part C, Section 2 (b)]

27. No visible or floating oils or grease shall be present in any waste discharge.

[QZ95-003 Part B, Section 24; IN89-002, Part C, Section 2 (c)]

28. No waste discharge shall be toxic to fish (i.e. fails to pass a 96 Hour LC50 Bioassay of 100%).

[QZ95-003 Part B, Section 25]

29. The concentrations of substances which shall not be exceeded in any waste discharge are listed below:

Maximum Concentration for any grab sample – in mg/L

Ammonia	(as N)	total	1.30
Antimony	(Sb)	total	0.10
Arsenic	(As)	total	0.05
Barium	(BA)	total	1.00
Cadmium	(CD)	total	0.02
Copper	(Cu)	total	0.20
Cyanide	(as CN)	total	0.05
Lead	(Pb)	total	0.20
Mercury	(Hg)	total	0.005
Molybdenum	(Mo)	total	0.50

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Nickel	(Ni)	total	0.50
Selenium	(Se)	total	0.05
Silver	(Ag)	total	0.10
Zinc	(Zn)	total	0.50

[QZ95-003 Part B, Section 26; IN89-002, Part C, Section 2 (d)]

30. The effluent standards listed in this licence shall be met at all points of entry to all receiving waters including, but not limited to, sampling station X5, X13, V2 and V25 BSP.

[QZ95-003, Part B, Section 27; IN89-002, Part C, Section 2 (e)]

PART C MODIFICATION AND CONSTRUCTION

31. The Licensee shall file with the board the final design and construction plans and specifications for any modifications to the existing water supply and associated facilities, the tailings dykes and related structures and other waste treatment or handling facilities prior to the proposed start of any construction or work other than the breaching of the Fresh Water Supply Dam.

[QZ95-003, Part C, Section 40]

32. The Licensee shall file a detailed construction schedule with the Board at least ten (10) days prior to commencing any construction work involving the existing water supply and associated facilities, the tailings dykes and related structures and other waste treatment or handling facilities.

[QZ95-003, Part C, Section 41]

33. The Licensee shall construct each structure and carry out work in accordance with the plans and specifications that have been submitted to the Board and in accordance with sound engineering practice, supervised by technically qualified person and, where appropriate, inspected by a professional engineer.

[QZ95-003, Part C, Section 42]

34. The Licensee shall notify a water inspector prior to the commencement of any instream construction.

[IN89-002, Part B, Section 5]

35. All design alterations shall be submitted to the board prior to any alterations being made.

[QZ95-003, Part C, Section 43]

36. The Licensee shall provide as-constructed plans and drawings of the works referred to in this Part of this licence within sixty (60) days after completion of construction. These shall be submitted on transparencies reproducible with the use of a standard printer.

[QZ95-003, Part C, Section 44]

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37. The Licensee shall design all dams and diversion canal slopes to withstand the 1:475 earthquake.

[QZ95-003, Part C, Section 45]

PART D CARE AND MAINTENANCE

Maintenance

38. During the term of this licence, the Licensee shall maintain in good order all works on the property and, in particular, the tailings disposal facilities, diversion canals, waste rock dumps and all associated works.

[QZ95-003, Part C, Section 48;IN89-002, Part B, Section 13]

39. The Licensee shall maintain the drainage collection ditches and collection pond and water treatment plant as outlined on Figure 2.16 of application IN89-002, Vangorda Plateau Development Water Use Application, Volume III – Figures so that any seepage flows freely into the collection pond and the pond shall be designed, constructed and maintained so that no significant seepage proceeds into the ground.

[IN89-002, Part B, Section 10]

40. (a) The Licensee shall maintain a temporary diversion of Vangorda Creek as proposed in Application IN89-002, Section 2.5.1 of Volume I – Report.

(b) The diversion referred to in Part B, Section 39(a) shall be designed to accommodate the twenty year peak flow and shall have a contingency capacity for a one hundred year flow.

[IN89-002, Part B, Section 12]

Tailings Management System

41. The Licensee shall channel the waters of Rose Creek around the tailings facility and shall ensure that the diversion canal has the hydraulic capacity to carry a 1:500 year flood flow.

[QZ95-003, Part B, Section 32]

42. The Licensee shall maintain the overflow structure on the Rose Creek diversion dam to ensure that flows that would cause overtopping of the diversion dykes are safely diverted through the tailing impoundments.

[QZ95-003, Part B, Section33]

43. The Licensee shall ensure that the spillways on the intermediate dam and the cross valley dam have the hydraulic capacity to carry a 1:500 year flood flow of Rose Creek.

[QZ95-003, Part B, Section 34]

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Waste Rock

44. In order to ensure the physical stability of waste rock dumps, the Licensee shall maintain the dumps in accordance with sound engineering practice and shall implement any appropriate stabilization measures that might be recommended as a result of inspections that are required by this licence.

[QZ95-003, Part B, Section 38]

Surveillance Network Program (Water Monitoring)

45. The Licensee shall comply with the Surveillance Network Program attached as Schedule A, hereto and shall comply with all provisions for sampling, sample preservation, reporting and analysis specified in this licence.

[QZ95-003, Part D, Section 50;IN89-002, Part D, Section 1 (b)(i)]

46. The Licensee shall compile all data relating to the surveillance network program into a monthly report. The report shall be submitted to the Board within thirty (30) days of the end of each month for which the report is compiled.

[QZ95-003, Part D, Section 49;IN89-002, Part D, Section 1(a)]

47. Where ICP scans are required in Schedule A, Part iii of this licence, then those scans shall include, at a minimum, all metal parameters listed in Section 27 of this licence. ICP scans at internal monitoring sites are required when available.

[QZ95-003, Part D, Section 52]

48. All analysis shall be conducted in accordance with the current edition of " Standard Methods for the Examination of Water and Waste Water", prepared and published jointly by the American Water Works Association and the Water Pollution Control Federation.

[QZ95-003, Part D, Section 53; IN89-002, Part D, Section 1 (b)(ii)]

49. The Licensee shall comply with a quality assurance/quality control program. The objective of the quality assurance/quality control program shall be to validate data and provide quality assurance and shall include minimum 10% field replicates and minimum 1 field blank per sample set.

[QZ95-003, Part D, Section 54]

50. The Licensee may construct a foot bridge across Rose Creek in the vicinity of location X14 for the purpose of obtaining high water flow measurements. The bridge shall not have footings or pilings in the creek, but may be a span across the creek.

[QZ95-003, Part D, Section 55]

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Biological Monitoring

51. The Licensee shall comply with the program of biological monitoring attached as Schedule B to this licence.

[QZ95-003, Part D, Section 56;IN89-002, Part D, Section 2]

Physical Monitoring

52. The Licensee shall carry out the physical monitoring program attached as Schedule C to this licence which includes monitoring of all waste dumps.

[QZ95-003,Part B, Section37, Part D, Section 57;IN89-002, Part D, Section 6]

Toxicity Monitoring

53. The Licensee shall collect and conduct four (4) bioassays each year from sampling points X5, X13 and V25BSP in accordance with "Standard Procedures for Testing the Acute Lethality of Liquid Effluent, Report No. EPS 1-WP-80-1, November 1980".

[QZ95-003, Part D, Section 58]

Monitoring – Water Treatment Plants

54. The Licensee shall, as a component of each annual report required by this licence, submit to the Board an annual performance evaluation report pertaining to all water treatment plants.

[IN89-002, Part E, Section 3]

55. This evaluation shall be conducted by an independent person with training and experience relevant to the water treatment plants operated by the Licensee.

[IN89-002, Part E, Section 3]

56. This report will include:

(a) An analysis of the plants performance in terms of treatment efficiency, capacity and compliance; and

(b) A review of water treatment plant daily operators logs; and

(c) Recommended remedial action, where such remedied action is deemed to be appropriate.

[IN89-002, Part E, Section 3]

Sediment Monitoring Program

57. The Licensee shall monitor the levels of sediment in Rose and Vangorda Creeks through compliance with the following sediment monitoring program:

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(a) Sample locations shall be those stipulated in Schedule B.

(b) Sampling shall be undertaken concurrently with sampling under Schedule B.

(c) Samples shall be in triplicate.

(d) Each sample shall be passed through a 100 mesh (0.15mm) stainless steel sieve and the portion passing through the sieve shall be analyzed for total metals listed in Section 27 of this licence.

[IN89-002, Part D, Section 3]

58. The Licensee shall submit a report on the sediment monitoring program concurrent with the report on the benthic invertebrate monitoring program report required by Schedule B.

[IN89-002, Part D, Section 3]

Studies Relating to Care and Maintenance

59. The Licensee shall carry out the studies relating to care and maintenance of the mine sites detailed in the May 2003 Report prepared jointly by the Licensee and Gartner Lee Limited titled "Water License Renewal Application Report" (the "May 2003 Report").

[new]

60. The Licensee may carry out any activities identified in such care and maintenance studies consistent with the terms of this licence.

[new]

61. In the annual report required to be filed by the Licensee under this licence, the Licensee shall report on all care and maintenance studies carried, if any, during the applicable year.

[new]

Adaptive Management Plan

62. The Licensee shall implement the Adaptive Management Plan (the "AMP") described in the May 2003 Report.

[new]

63. In the annual report required to be filed by the Licensee under this licence, the Licensee shall report on all activities carried out under the AMP, if any, during the applicable year.

[new]

Comprehensive Risk Assessment

64. The Licensee shall update the Comprehensive Risk Assessment detailed in the May 2003 Report each year (the initial and each updated assessment being referred in this licence as the "CRA").

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[new]

65. The Licensee shall act in accordance with the CRA.

[new]

66. In the annual report required to be filed by the Licensee under this licence, the Licensee shall report on all activities carried out under the CRA, if any, during the applicable year.

[new]

Technical Advisory Committee

67. The Licensee shall make every reasonable effort to maintain a technical advisory committee hereinafter referred to as the "TAC".

[IN89-002, Part E, Section 2]

68. Membership on the TAC shall be extended to, but not necessarily limited to, representatives of:

(a) The applicable departments of Government of Yukon;

(b) The Yukon Conservation Society;

(c) those First Nations identified as affected in the Devolution Transfer Agreement;

(d) Deloitte & Touche Inc. in its capacity as the interim receiver of Anvil Range Mining Corporation;

(e) Environment Canada;

(f) Fisheries and Oceans Canada;

(g) Indian and Northern Affairs Canada;

(h) Town of Faro; and

(i) Yukon Salmon Committee.

[IN89-002, Part E, Section 2]

69. The TAC shall meet annually or more frequently as deemed necessary by the Licensee and shall determine its operational and administrative procedures. The Licensee shall also provide to the TAC a semi-annual report on care and maintenance.

[IN89-002, Part E, Section 2]

70. The objects of the TAC shall be:

(a) to share and exchange technical data pertaining to care and maintenance study results and monitoring and surveillance requirements of this licence;

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(b) to promote and foster co-operative efforts designed to develop a better understanding of membership concerns and issues;

(c) to provide advice to the Licensee for various studies and research requirements to be undertaken pursuant to this licence with respect to care and maintenance.

[IN89-002, Part E, Section 2]

71. The Licensee shall, as part of each annual report, submit an annual report to the Board regarding the activities of the TAC. The annual report will include:

(a) Copies of all studies undertaken on behalf of the TAC; and

(b) Comprehensive listing of all planned care and maintenance studies and related schedules.

[[IN89-002, Part E, Section 2]

PART E - REHABILITATION AND ABANDONMENT

72. On or before December 31, 2006, the effective date of this licence, the Licensee shall submit to the board a Final Closure and Reclamation Plan ("FCRP") for the Faro mine site.

[new]

73. Construction design standards for tailings decommissioning shall be established to meet the requirements of probable maximum flood ("PMF") and Maximum Credible Earthquake ("MCE").

[QZ95-003, Part E, Section 65]

74. Upon permanent cessation of mining and milling operation the Licensee shall:

(a) abandon the property in such a way as to ensure the long term physical stability of all water courses and tailings deposits with minimal post operational maintenance; and

(b) abandon the operation in such a manner that the long term water quality of Rose Creek downstream of the tailings facility shall comply with the Canadian Water Quality Guidelines for the protection of Aquatic Life, prepared by the Canadian Council of Ministers of the Environment, 1999, updated 2001.

[QZ95-003, Part E, Section 66]

75. All discharges from the property after abandonment shall not exceed the concentrations listed in this licence.

[IN89-002, Part G, Section 1]

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76. The Licensee shall ensure that waste dumps are maintained and abandoned in such a manner as to minimize acid generation after abandonment of the project.

[IN89-002, Part G, Section 3]

77. The Licensee shall not be required during the term of this licence to carry out the licence terms set forth in Schedule D, which terms, though not deleted, are being held in abeyance.

[IN89-002, Part B, Section 9]

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SCHEDULE A - SURVEILLANCE NETWORK PROGRAM
FARO MINE SITE

Codes: C=continuously; W=weekly; WD=weekly when discharging; M=monthly; SF=spring and fall; WS=winter and summer; A=annually freshet
OTHER=field pH, field temperature, field conductivity, TSS, SO4, NH_3
For Groundwater Samples: "OTHER" to include purge volume, purge rate, purge time and sampling time
For flows read by staff gauge or weir: staff gauges to be verified by survey and/or manual flow measurement at least once per year

Sample	Location	Sample	ICP-T	ICP-D	OTHER	HARDNESS	FLOW/LEVEL
Routine Surface Samples							
X2	N. Fork at access road	M	Y	Y	Y	Y	M
X3	pumphouse pond	M	Y	Y	Y	Y	N
X4	Intermediate Pond at spillway	M	Y	Y	Y	N	M
X5	Cross Valley Pond surface outflow	WD	Y	Y	Y	Y	WD
X5P	Cross Valley Pond at spillway	M	Y	Y	Y	N	M
X11	Cross Valley Dam N. seep	WS	Y	Y	Y	N	W
X12	Cross Valley Dam S. seep	WS	Y	Y	Y	N	W
WEIR3	Cross Valley Dam central seep	WS	Y	Y	Y	N	W
X13	Cross Valley Dam total seepage	M	Y	Y	Y	Y	W
X14	Rose Creek d.s. mixing zone	WD / M	Y	Y	Y	Y	C
X22B	Faro Main pit at pumping barge	M	Y	Y	Y	N	M
X23	Old Faro Creek at toe of rock dumps	M	Y	Y	Y	N	M
X26	Faro Zone 2 pit pumped discharge	MD	Y	Y	Y	N	M
R1	S. Fork u.s. pumphouse pond	WS	Y	Y	Y	Y	WS
R2	Rose Creek d.s. mixing zone	-	-	-	-	-	-
R3	Rose Creek mid length	WS	Y	Y	Y	Y	WS
R4	Rose Creek u.s. Anvil Creek	WS	Y	Y	Y	Y	WS
R5	Anvil Creek d.s. Rose Creek	WS	Y	Y	Y	Y	WS
R6	Anvil Creek u.s. Rose Creek	WS	Y	Y	Y	Y	WS
FAROCR	outlet of Faro Creek diversion	M	Y	Y	Y	N	N
R7	N. Fork u.s. Faro Creek diversion	M	Y	Y	Y	N	C
R8	N. Fork d.s. Faro creek diversion	M	Y	Y	Y	N	N
R9	N. Fork adjacent Zone 2 rock dumps	M	Y	Y	Y	N	N
R10	N. Fork d.s. Zone 2 rock dumps	M	Y	Y	Y	N	N
Groundwater Samples							
X16	d.s. Rose Creek Tailings Facility	SF	N	Y	Y	N	SF
X17	d.s. Rose Creek Tailings Facility	SF	N	Y	Y	N	SF
X18	d.s. Rose Creek Tailings Facility	SF	N	Y	Y	N	SF
X21-96	Rose Creek Tailings Facility	SF	N	Y	Y	N	SF
X24-96	Rose Creek Tailings Facility	SF	N	Y	Y	N	SF
X25-96	Rose Creek Tailings Facility	SF	N	Y	Y	N	SF
P01-01 to 11	Rose Creek Tailings Facility	SF	N	Y	Y	N	SF
TH86-26	u.s. Rose Creek Tailings Facility	SF	N	Y	Y	N	SF
BH1	Zone 2 rock dumps	SF	N	Y	Y	N	SF
BH2	Zone 2 rock dumps	SF	N	Y	Y	N	SF
BH4	Zone 2 rock dumps	SF	N	Y	Y	N	SF
BH12	NE rock dumps	SF	N	Y	Y	N	SF
BH13	NE rock dumps	SF	N	Y	Y	N	SF
BH14	NE rock dumps	SF	N	Y	Y	N	SF
P96-6	Main/Int rock dumps	SF	N	Y	Y	N	SF
P96-7	Main/Int rock dumps	SF	N	Y	Y	N	SF
P96-8	Main/Int rock dumps	SF	N	Y	Y	N	SF
S1	Main/Int rock dumps	SF	N	Y	Y	N	SF
S2	Main/Int rock dumps	SF	N	Y	Y	N	SF
S3	Main/Int rock dumps	SF	N	Y	Y	N	SF
Annual Seep Samples (to include these locations at a minimum plus other observed freshet surface seeps at toe of rock dumps)							
FDU	Faro creek diversion u.s. end	A	Y	Y	Y	N	A
FDL	Faro Creek Diversion	A	Y	Y	Y	N	A
FCO	Old Faro Creek u.s. Faro Valley dump	A	Y	Y	Y	N	A
A30	Flow to Main pit from Faro Valley dump	A	Y	Y	Y	N	A
A25	Main Pit northwest wall	A	Y	Y	Y	N	A
SP5/6	Internal surface flow on Faro rock dump	A	Y	Y	Y	N	A
NE1	N. seep to N. Fork from NE dumps	A	Y	Y	Y	N	A
NE2	Central seep to N. Fork from NE dumps	A	Y	Y	Y	N	A
NE3	S. seep to N. Fork from NE dumps	A	Y	Y	Y	N	A
NF1	u.s. side rock drain	A	Y	Y	Y	N	A
NF2	d.s. side rock drain	A	Y	Y	Y	N	A
W5	east dump	A	Y	Y	Y	N	A
W8	Upper Guardhouse Creek d.s. NW dump	A	Y	Y	Y	N	A
W10	Upper Guardhouse Creek u.s. NW dump	A	Y	Y	Y	N	A
GDHSECK	Guardhouse Creek at Intermediate pond	A	Y	Y	Y	N	A
IDSEEP	Intermediate Dam toe seep, S. side	A	Y	Y	Y	N	A
X7	seep d.s. emergency tailings area	A	Y	Y	Y	N	A

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VANGORDA PLATEAU MINE SITE

Codes: C=continuously; WD=weekly when discharging; M=monthly; SF=spring and fall; SSF-spring, summer andf fall; Q=quarterly
OTHER=field pH, field temperature, field conductivity, TSS, SO4, NH_3
For Groundwater Samples: "OTHER" to include purge volume, purge rate, purge time and sampling time
For flows read by staff gauge or weir: staff gauges to be verified by survey and/or manual flow measurement at least once per year

Sample	Location	Sample	ICP-T	ICP-D	OTHER	HARDNESS	FLOW/LEVEL
Routine Surface Samples							
V1	Main Stem u.s. VG pit	Q	Y	Y	Y	Y	Q
V2	Grum creek to VG Creek	M	Y	Y	Y	Y	M
V2A	Grum Creek to Moose Pond	M	Y	Y	Y	N	M
V4	Shrimp Creek	SSF	Y	Y	Y	Y	N
V5	West Fork at gravel pit	M	Y	Y	Y	Y	Q
V6A	AEX Creek	Q	Y	Y	Y	Y	Q
VGMAIN	Main Stem at Town of Faro	M	Y	Y	Y	Y	N
V8	Lower VG Creek	M	Y	Y	Y	Y	C
V14	Grum rock dump N. toe seep	SF	Y	Y	Y	N	SF
V15	Grum rock dump central toe seep	M	Y	Y	Y	N	M
V16	Grum rock dump S. toe seep	SF	Y	Y	Y	N	SF
V17A	creek from Grum ore transfer pad	SF	Y	Y	Y	N	SF
V19	VG pit NW diversion ditch	SF	Y	Y	Y	N	SF
V20	VG pit NE diversion ditch	SF	Y	Y	Y	N	SF
LCD	Little Creek Dam pond at old pumphouse	SF	Y	Y	Y	N	M
V22	VG pit at pumping barge	Q	Y	Y	Y	N	M
V23	Grum pit at haul road	Q	Y	Y	Y	N	M
V24	influent to water treatment plant	WD	Y	Y	Y	N	WD
V25	effluent from clarification pond	WD	Y	Y	Y	Y	WD
V25BSP	Grum Interceptor Ditch below Sheep Pad Pond	WD / M	Y	Y	Y	Y	WD / M
V27	Main Stem u.s. Shrimp Creek	SSF	Y	Y	Y	Y	N
V29	VG dump drain #2	SF	N	Y	Y	N	SF
V30	VG dump drain #3	SF	N	Y	Y	N	SF
V31	VG dump drain #4	SF	N	Y	Y	N	SF
V32	VG dump drain #5	SF	N	Y	Y	N	SF
V33	VG dump drain #6	SF	N	Y	Y	N	SF
Groundwater Samples							
V37	VG rock dump, GW94-01	SF	N	Y	Y	N	SF
V38	VG rock dump, GW94-02	SF	N	Y	Y	N	SF
V39	VG rock dump, GW94-03	SF	N	Y	Y	N	SF
V40	VG rock dump, GW94-04	SF	N	Y	Y	N	SF
P96-9	Grum rock dump	SF	N	Y	Y	N	SF
P01-01 to 03	Vangorda rock dump	SF	N	Y	Y	N	SF
Annual Seep Samples (to include observed freshet surface seeps at toe of rock dumps that are not included above)							

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SCHEDULE B – BIOLOGICAL MONITORING

1. Sampling Points

Rose Creek

(a) R1: Above the confluence of the North Fork and South Fork of Rose Creek

(b) R2: In the mixing zone downstream of the intersection of the Rose Creek diversion canal

(c) R3: Rose Creek about one-half way to Anvil Creek

(d) R4: Rose Creek just above Anvil Creek

(e) R5: Anvil Creek just below the confluence of Rose Creek

(f) R6: Anvil Creek immediately upstream of Rose Creek

(g) R7: North Fork of Rose Creek upstream of the confluence with the Faro Creek diversion

Vangorda Creek

(h) V1: Vangorda Creek upstream from the mine and Blind Creek Road

(i) V5: West Fork of Vangorda Creek upstream of mine access road

(j) V8: Vangorda Creek near bridge to Faro town water supply

(k) V27: Main stem of Vangorda Creek just upstream of confluence with Shrimp Creek

2. The Licensee shall collect three replicate samples of benthic invertebrates every second year from each station using an artificial substrate sampler for approximately five (5) weeks

3. (a) Water samples shall be collected and analyzed for total hardness, alkalinity, sulphate, suspended solids, ammonia and for a complete ICP scan of total and dissolved metals that includes copper, iron, lead, and zinc.

(b) Water samples shall be collected according to standard sampling protocols and field measurements of pH, temperature and conductivity will be recorded.

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(c) Flow will be measured at each location except that one of locations R4, R5, or R6 may be calculated.

4. Samples shall be collected by an independent consultant

5. Sample identification, enumeration and data interpretation shall be done by independent qualified personnel

6. The Licensee shall compile a report of all data collected and shall submit this report to the Board as a component of the annual report

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SCHEDULE C – PHYSICAL MONITORING

Annual Inspection

1. The Licensee shall ensure that all earthworks are inspected during the summer of each year by a professional geotechnical engineer registered to practice in the Yukon Territory (the "engineer"). The earthworks to be inspected shall include but not be limited to:

   Faro Mine Site

   a) Intermediate Dam
   b) Cross Valley Dam
   c) Rose Creek Diversion Canal including containment dyke and backslope
   d) North Fork Rock Drain including the crest and slope of the local rock dump
   e) Faro Creek diversion channel

   Vangorda Plateau Mine Site

   f) Vangorda Creek Diversion Flume including the rock and soil slopes above the flume
   g) Vangorda Rock Dump
   h) Grum Rock Dump
   i) Grum Interceptor Ditch/Sheep Pad Pond
   j) Grum/Vangorda Water Treatment Plant Freshwater Supply Pond
   k) Grum/Vangorda Water Treatment Plant Clarification Pond

2. The licensee shall submit a complete report prepared by the engineer on all physical monitoring activities as part of the Annual Report required by this license.

Geotechnical Performance Monitoring Instrumentation

3. The monitoring schedule and locations for readings of geotechnical performance monitoring instrumentation will follow the recommendations of the professional engineer, which will be a component of the engineer's annual inspection reports.

4. The licensee may repair, maintain or install additional performance monitoring instrumentation according to the recommendations of the engineer.

Rose Creek Diversion Canal

5. (a) The Rose Creek diversion canal shall be monitored visually and through the instrumentation installed. Gathered data shall be analyzed by a professional engineer registered to practice in the Yukon Territory to determine:

   (i) Thermal regime and degradation of the permafrost;

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(ii) Stability of the excavated canal wall;

(iii) Settlement and stability of the canal dyke;

(iv) Areas and rates of seepage from the diversion canal;

(v) Performance of the waste piles adjacent to the canal;

(vi) Other areas of concern

(b) If the analysis referred to in 8(a) above demonstrates that design objectives for geotechnical performance and project safety have not been met, the Licensee shall propose remedial measures to the Board and implement those measures unless, within sixty days of receiving the proposed remedial measures, the Board notifies the Licensee that a public hearing shall be held to amend the license so as to incorporate the remedial measures into the license, and the notice includes a direction that the Licensee shall not implement the remedial measures until the public hearing has been held and the Board has concluded deliberations. However, the Board may, in the notification of the Licensee, direct the Licensee to implement the remedial measures on an interim basis.

(c) The network of monitoring instrumentation, as amended from time to time, shall be monitored at least twice per year (spring and fall) and according to the recommendations of the engineer.

(d) Glaciation within the diversion canal shall be monitored during the winter season as follows:

(i) Monthly inspections of build up; and
(ii) All corrective or preventative action shall be documented.

(e) Any erosion activity within the diversion canal shall be studied and documented and preventative measures taken to stabilize the activity.

Intermediate and Cross Valley Dams

9. The Intermediate and Cross Valley dams shall be monitored visually and through the instrumentation installed. Gathered data shall be analyzed by a professional engineer registered to practice in the Yukon Territory.

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Rock Drain

10. The causeway section and performance of rock drains and culverts should be examined annually and records of upstream water levels versus North Fork flows made annually in February and June.

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SCHEDULE D – REHABILITATION AND ABANDONMENT ABEYANCE CLAUSES

1. Decommissioning of the Down Valley Tailings Facility shall comply with Option 5 of the Down Valley Tailings Impoundment Decommissioning Plan (otherwise known as SRK Report 60635), providing that the following requirements have first been met:

   (a) The Licensee shall, by December 31, 2001, complete a Tailings Reprocessing Feasibility Study. This study shall include a financial feasibility component.

   (b) The Licensee shall submit to the Board a financing plan pertaining to Option 5.

   (c) The feasibility study and financing plan referred to in this part shall be subjected to public review.

   [QZ95-003, Part E, Section 63]

2. In the event that permanent abandonment occurs, or may reasonably be expected to occur, prior to the requirements of Section 1 of this Schedule having been completed, the Licensee shall ensure that abandonment of the tailings facilities takes place in accordance with Option 4 of the Down Valley Tailings Impoundment Decommissioning Plan (also known as SRK Report 60635).

   [QZ95-003, Part E, Section 64]

3. In addition to any other requirements of this licence, the Licensee shall, upon permanent cessation of mining and milling operations, fulfill all of the follow obligations:

   (a) remove the pump house and cover its foundation;

   (b) remove the pump house dam;

   (c) leave the North Fork of Rose Creek in a stable condition;

   (d) remove the Faro Creek diversion structure and route Faro Creek into open pit No.1;

   (e) ensure that waste rock dumps constructed of durable rock have slope crests wihta set back distance equivalent to a slope of two horizontal to one vertical;

   (f) ensure that waste rock dumps constructed of weak or friable rock and overburden have slope crests with a set back distance equivalent to three horizontal and one vertical;

   (g) abandon sulphide-rich waste rock in a manner such that oxidation and leaching are unlikely to occur;

   (h) establish the out flow from open pit No. 1 such that exposure of mineralized rock in the pit in minimized;

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(i) implement the "Curragh Resources Inc. other Facilities Abandonment Plan, June 1989";

(j) breach the North Fork Haul Road rock drain.

[QZ95-003, Part E, Section 67]

4. In addition to the measures required by this licence, the Licensee shall, upon permanent cessation of operations at the Faro mine site, implement the measures described in the "Faro Mine Abandonment Plan (Curragh Resources Inc., 1988)" according to the schedule contained therein, to the extent that this plan does not conflict with the tailings deposition plan contained in Kilborn Report 350928, or the abandonment strategy for the North Fork Causeway proposed in Curragh report WH9108, or to the extent that said plan is not superseded by subsequently filed plans which are appended to this licence.

[QZ95-003, Part E, Section 68]

5. Effluent from the waste water treatment plant described in "Faro Mine Abandonment Plan (Curragh Resources Inc., 1988)" must been the effluent standards listed in this licence.

[QZ95-003, Part E, Section 69]

6. The Licensee shall continue to maintain and operate a water treatment plant in perpetuity in order to ensure that the standards imposed by Part C of this licence are not exceeded.

[IN89-002, Part G, Section 2]

7. The Licensee shall, by June 15, 1994, submit to the Board a detailed plan for the abandonment of the Grum/Vangorda project. The Licensee shall comply with the abandonment monitoring program as proposed in Section 4.9 of Exhibit 1(a) of application IN89-002.

[IN89-002, Part G, Section 4]

8. The Licensee shall, by June 15, 1998 and every fourth anniversary thereafter, submit to the Board a comprehensive analysis of the effectiveness of the mitigative measures of the abandonment plan, particularly as they pertain to acid mine drainage.

[IN89-002, Part G, Section 5]

9. The Licensee shall within five years of continuous cessation of operations, implement an approved tailings pond permanent abandonment plan.

[QZ95-003, Part B, Section 35]

10. At least ninety (90) days prior to construction, the Licensee shall submit to the board detailed designs and site investigations for the Faro Pit Dam and associated water conveyance structures.

[QZ95-003, Part B Section 46]

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11. The Licensee shall construct the Faro Pit Dam and associated conveyance structures in accordance with the design that is submitted, except that, should the Board notify the Licensee that public hearing will be held to discuss the designs, and should the notice include a direction not to release any effluent until such time as a public hearing has been convened and the board has concluded its deliberation, then the Licensee shall not release any effluent.

[QZ95-003, Part B Section 47

12. Upon abandonment the Licensee shall construct the Vangorda pit wall covers as outlined in SRK Report 60609, February 1990 (section 5, alternative 3.2).

[IN89-002, Part B, Section 9]

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2010 VANCOUVER FRIENDLY

August 6, 2003

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Yukon Water Board
#106 - 419 Range Road
Whitehorse, Yukon
Y1A 3V1

Attention: Judi White

Dear Sirs/Mesdames:

Re: Deloitte & Touche Inc. in its capacity as Interim Receiver of Anvil Range Mining Corporation ("Anvil Range") – Application to Consolidate and Renew Existing Licences QZ95-003 and IN89-002

We acknowledge receipt of your letter addressed to Shannon Glenn and the writer dated July 25, 2003 with respect to the date for the public hearing in this matter. We understand that the Town of Faro would like the public hearing to be held in Faro and the Interim Receiver is supportive of the Town's request provided this does not delay the date of the hearing. The Interim Receiver appreciates that holding the hearing in Faro would be of benefit to the communities in the area.

We trust you find the foregoing in order and we look forward to hearing from you further in this matter.

Yours truly,

MILLER THOMSON LLP

Per:

Murray J. Leitch

MJL/dh
Enclosure

c: Deloitte & Touche Inc.
Attention: Wes Treleaven and Shannon Glenn

QZ03-059
EXHIBIT 1.6

Y I W B

QZ03-059

Yukon Water Board

Office des eaux du Yukon

September 19, 2003

by fax to:

S. Glenn, Deloitte & Touche
Chief J. Ceaser, Ross River Dena Council
D. Johnny, Selkirk RRC
L.Gomm, GY ECO
D. Brent, GY EMR
B. Slater, GY Environment
R. Gotthards, GY Tourism & Culture
C. Cleghorn, YCS
L. Smith, YSC
M. Leitch, Miller Thompson
Chief L. McGinty, Selkirk First Nation
D. Power, Town of Faro
V. Enns, Environment Canada
J. Bowen, GY Environment
A. Foos, GY Fisheries Management
A/Chief, Habitat, DFO
CPAWS

RE: APPLICATION QZ03-059, DELOITTE AND TOUCHE, ANVIL RANGE
DEADLINE FOR SUBMISSION OF INTERVENTIONS

This is just a reminder that the deadline for submission of interventions for this application is

Twelve Noon, Friday September 26, 2003

The Board's Rules of Procedure require that participants must file their notices of intervention by the deadline. The Rules of Procedure also set out the Board's requirements for interventions, and describe how the hearing will be conducted. Copies of the Rules were included with my August 20 letter, and we will be happy to provide additional copies in either paper or electronic form.

The hearing will be held at the Faro Recreation Centre, beginning on October 27, 2003 at 9 am.

Judi White, Manager
Yukon Water Board

q59reminder

October 2, 2003

Shanon Glenn
Deloitte & Touche

Murray J. Leitch
Miller Thomson

D. Sherstone, DIAND Type II Mines, &
M. Crombie, YTG Type II Mines

Chief Jack Ceaser, Ross River Dena Council,
& Rod Snow, Davis and Company

Deputy Chief Sharon Sims
Selkirk First Nation

Bengt Pettersson
GY Environment

David Power
Town of Faro

Vic Enns
Environment Canada

RE: Public Hearing, Water Use Application QZ03-059, Deloitte & Touche Inc.

This letter is being sent to all parties, to provide information about the public hearing that will take place later this month, and to request additional information from some or all of the parties.

The public hearing will be conducted according the Board's Rules of Procedure. Copies of the rules have been sent to everyone, and additional copies can be provided in either paper or electronic form by contacting the Water Board office. Contact information is provided at the end of this letter. The information in this letter is only supplemental to the Rules of Procedure, and where there is a discrepancy, the rules will prevail.

Site Tour

The Board intends to tour the Faro site at 9 am on Sunday, October 26, and all parties are invited to attend. It is likely that travel within the mine site will be by bus, but each party will responsible for their own transportation to the mine site. If you plan to attend, please contact our office as soon as possible but no later than October 9, 2003, and tell us how many people you will be sending. Additional information about the site tour will be sent out after we know the

QZ03-059
Exhibit 4.1

number of people that will be involved. The purpose of the site tour is solely to provide a better understanding of the physical site, and the Board will not entertain any discussion of the application by any of the parties during the site tour. Your cooperation is requested on this matter.

Date and Location of Public Hearing

The hearing will take place at the Faro Recreation Centre. It will begin at 9 am on October 27, 2003. It is likely that it will break for approximately 20 minutes in both the morning and afternoon, 90 minutes at noon, and end at 5 pm each day. However, that determination will be made by the Chairperson as the hearing progresses.

Duration of Public Hearing

The duration of any public hearing is impossible to predict, because it is affected by so many factors, including, but not limited to, the complexity of the issues, the duration of the presentations, and delays caused by late submissions and procedural discussions. I can advise that we have booked the hearing facility for five days. It is unlikely that there will be evening sessions, because that time is usually needed to review any late material and prepare for the next session; but that decision will be made by the Chairperson as the hearing progresses. If the hearing is not concluded by the end of the fifth day, then the Board will make a determination about whether to continue through the weekend or whether to adjourn and reconvene at some point in the future. None of this can be determined in advance.

Number of Participants

In order to assist us in arranging the hearing room to accommodate everyone as comfortably as possible, we need to now how many people will be attending and, if possible, their names. This information isn't binding, you are free to change the numbers and the names. But if we don't know who will be attending, then we will have to make some arbitrary assumptions and that could mean-that your delegation may not be provided with enough table space for everyone. We would also like to be able to give the people in Faro some indication of how many people will be in town for the hearing, so that they can be prepared.

Please advise us of the names of the people in your party no later than October 9, 2003. If you do not have names, a number will be quite sufficient.

Order of Appearance

At the hearing, the applicant will first be asked to give a presentation about the application. Then, each of the interveners may ask questions, after which the Board members and consultants

QZ03-059
Exhibit 4.1

may ask questions. Next, each intervener will, in turn, be asked to present their interventions and respond to questions from all other parties. After that, the applicant may respond to the interventions. Finally, each party will be given an opportunity to make closing statements. It is quite acceptable for a party to rely on their written submission, without further elaboration (although that doesn't relieve the party from the responsibility to respond to questions). Similarly, parties may choose whether or not to make a closing statement.

The order of appearance for interveners will be as follows:
1.DIAND and Government of Yukon, EMR (joint)
2. Ross River Dena Council and Kaska Nation
3. Government of Yukon, Environment
4. Environment Canada and Fisheries and Oceans Canada (joint)
5. Town of Faro
6. Selkirk First Nation

The opportunity for questions after each presentation will follow the same list, with the applicant asking their questions first, followed by the interveners, then the Board, then Board consultants.

The order of appearance generally reflects the order in which the interventions were received. Town of Faro and Selkirk First Nation have both advised that they will be seeking leave to submit late material. In the event that the Board accepts the late filings, this order of appearance will allow some additional time for the Board to review that material in advance of the interventions being presented. These late filings will also have to comply with the requirements discussed elsewhere in this letter.

Late Filings

The Rules of Procedure (rule 8 and rule 17) require that interventions must be submitted by the intent date, and must be accompanied by all supporting documentation. The Rules also allow late filings where a submission is in response to a matter raised by another party or by the Board, or where the implementation of that requirement would otherwise be unfair to a party, and where the Board agrees to accept the late filing. We have been given notice that two parties will be asking the Board to accept late submissions.

I urge everyone to please review Rule 17 prior to the hearing. In addition, the Board has developed a standard practice regarding administrative requirements that parties must meet when they intend to ask for leave to submit late exhibits. These requirements have been developed in order to minimize delays at hearings, while still complying with the principles of fairness. Please review the following carefully and contact our office if you have any questions. Except for the applicant's response to interventions, any party who wants the board to consider any paper whatsoever that is not already included in the water use register (as per the exhibit list dated

October 1, 2003, which is included with this letter) will be expected to comply with these administrative requirements:

- Contact our office as soon as possible, and before the hearing, give us a title for each document, and obtain a tentative exhibit number for each document.

- Indicate the application number (QZ03-059) and the tentative exhibit number on the lower right hand corner of *each* page of your proposed exhibit.

- Before the hearing, distribute a copy of your proposed exhibit to each other party.

- Before the hearing, provide the water board staff with an additional *fifty* copies. All of these copies must be three hole punched. You are responsible for providing the appropriate number of copies; water board staff will not be able to help you.

At the commencement of the hearing, the Chairperson will provide an opportunity for parties to ask for approval to submit late exhibits, and will ask if any party objects to the late submissions. There is an expectation that, in fairness, you will have provided the other parties with their copies sufficiently in advance so that they can speak to the matter. It is also possible that the Chairperson will ask how these proposed late submissions comply with the intent of Rule 17.

Your cooperation in complying with the process described above will help us to avoid unnecessary delays during the public hearing.

Visual Aids

If you plan to use any visual aids, then we will need to keep a copy as part of the register, and you will still need to obtain an exhibit number before the hearing, so that you can mark that number on the copy that you give us. However, it is not necessary to provide copies of those visual aids to the other parties, providing that they do not contain any information except what is already included in the current water use register, as of October 1, 2003. If a visual aid includes any information that is not already in the water use register, then it will be part of the application, the applicant's response, or an intervention. In that case, you must comply with the requirements for late exhibits, including distributing it to all parties in advance and providing fifty copies to the Board.

When using visual aids at the hearing, please make sure that your verbal presentation includes specific cross references to your visual presentation. This will help the Board during their subsequent deliberations, because they will be able to refer to the correct part of your visual aid as they review the transcript. One successful method has been to number each slide/page and then say the number before you begin your remarks about that slide/page.

QZ03-059
Exhibit 4.1

Applicant's Response to Interventions

The applicant does not need to provide the other parties with copies of their responses to interventions in advance of the hearing, since this would not be a late submission. However, in the interests of avoiding delays, the applicant is requested to obtain tentative exhibit numbers, and to provide fifty copies, annotated with the application and exhibit numbers, and 3 hole punched.

Conduct During the Hearing

The hearing will be conducted in a small community, and contact between Board members and the parties is likely inevitable. Your cooperation is requested in helping us to maintain the public nature of our process by not initiating conversations with Board members that could in any way be misconstrued as a conversation about the application.

Public Participation at the Hearing

The Board's Rules of Procedure set out clear requirements for parties to announce their intention to participate well in advance of the hearing, and there is no provision for members of the public, who have not intervened, to actively participate in the hearing. The Rules only allow people to make a statement at the end of the hearing, immediately prior to the applicant's closing remarks, but they cannot participate in questioning any of the parties, or make any statement except at the time provided. If you are aware of any person who intends to be at the hearing and wants to speak, please tell them about this limitation. Anyone wanting to attend the hearing only to observe the proceedings is welcome.

Translator

The Board will provide a Kaska interpreter for Kaska speakers at the public hearing. It would be helpful, however, to have an estimate, by October 9, of how many people will be using the services of the interpreter.

Telephone Participation

We have not received any requests for participation by telephone by any of the parties, and we will not have the ability to accommodate any late requests for telephone participation.

Accommodation and Funding for Participants

The Water Board has no ability to provide funding for parties. Similarly, we do not have the authority or the resources to provide, or arrange, accommodation, travel or meals for

QZ03-059
Exhibit 4.1

participants. The Town of Faro has a comprehensive list of accommodation opportunities in the community, and parties are urged to contact the Town for further information.

Water Board Contact Information

Water Board staff will be happy to receive the information that's been requested in this letter, provide additional copies of any exhibits, respond to your questions, or provide tentative exhibit numbers, via the following contact information:

Phone: 867 456 3980. We accept collect calls.
Email: YTWB@polarcom.com
Fax: 867 456 3890

Copies of the current exhibit list and distribution list, as well as exhibits 5.1 through 5.6, and exhibit 9.1 are enclosed with this letter. All other exhibits have been previously distributed. Please call me if you want additional copies of any exhibits, if you would like to discuss the public hearing process, or if I can provide any other assistance.

Judi White, Manager
Yukon Water Board

filename:/ q59hearinginfo

encl: exhibit list, Oct 1/03; distribution list, Oct 1/03; exhibits 5.1 through 5.6 and 9.1

QZ03-059
Exhibit 4.1

Deloitte & Touche LLP
Suite 1900
79 Wellington Street West
Toronto, ON M5K 1B9
Canada

Tel: (416) 601 6150
Fax: (416) 601 5901
www.deloitte.ca

Memo

Deloitte & Touche

Date: October 6, 2003

To: File

From: Shannon Glenn

Subject: Hearing interventions and response

This file contains interventions filed by:

1. DIAND and Government of Yukon, EMR (joint)
2. Ross River Dena Council and Kaksa Nation
3. Government of Yukon, Environment
4. Environment Canada and Fisheries and Oceans Canada
5. Town of Faro
6. Selkirk First Nations

in response to the materials filed by the Interim Receiver to the Water Board in its application to renew the water licences for the Anvil Range property. It also contains the response of the Interim Receiver to these interventions.

Indian and Northern Affairs Canada / Affaires indiennes et du Nord Canada

Yukon

Northern Affairs Program
#300-300 Main St.
Whitehorse, YT Y1A 2B5

Energy, Mines and Resources
Box 2703
Whitehorse, YT Y1A 2C6

Type II Mines Project Office Fax: (867)667-3861

September 26, 2003

YUKON TERRITORY WATER BOARD
2003 SEP 26 AM 11:04
APPL. NO. QZ03-059

Ms. Judi White, Manager
Water Board Secretariat
Yukon Water Board
Suite 106, 419 Range Road
Whitehorse, Yukon, Y1A 3V1

Dear Ms. White:

TYPE II MINES PROJECT OFFICE INTERVENTION: WATER USE LICENCE QZ03-059; CARE & MAINTENANCE OF THE ANVIL RANGE MINING PROPERTIES, FARO

This is the formal intervention of the joint DIAND and Government of Yukon (GY) Type II Mines Project Office. Representatives of this office will attend the October 27-31 public hearing in Faro.

Support for the Proponent's Application
Both partners in the joint Type II Mines Project Office support the project submitted to the Board as application QZ03-059. A five-year term (to December 31, 2008) is also supported.

Role of the Type II Mines Project Office
The Type II Mines Project Office was established on April 01, 2003, to cooperatively and jointly discharge the responsibilities of the Governments of Canada and Yukon for those major mining properties specified as "Type II" in Chapter 6 of the Canada-Yukon Devolution Transfer Agreement (DTA) of October 29, 2001.

The mandate of this office includes:

* Ensuring operational and environmental care & maintenance to those Type II mines that are derelict (i.e. no owner or operator, but not formally abandoned). In the case of the Anvil Range properties this is done by reviewing the work undertaken by the Receiver and providing input to studies and special projects. Work is also underway to facilitate First Nation involvement in these activities.

* Managing research programs and final abandonment planning.

* Administering Canada-Yukon funding arrangements for work at Type II Mines.

* Collaborating with First Nations to integrate their involvement/participation in closure planning.

* Planning and carrying out consultation with stakeholders and the public.

In the area of mine abandonment the responsibilities of the Type II Mines Project Office include coordinating the efforts of both governments in:

* The preparation of reports, documents, etc., for Type II mines that are abandoned or determined abandoned pursuant to the processes set out in the DTA.

* Provision of oversight, special project review and monitoring of projects

* Working in conjunction with First Nations and Other Government Departments (OGDs) to develop acceptable criteria, standards and plans for final closure/abandonment.

* Working with affected communities, Non-Government Organizations (NGOs) and other stakeholders to incorporate their input into the development of acceptable criteria, standards and plans for final closure/abandonment.

Responsibility for Ensuring Final Abandonment of the Anvil Range Properties:
At the January 21-22, 2003 Anvil Range Technical Advisory Committee Meeting the DIAND tabled a January 20, 2003 letter which formally set out DIAND's goals and objectives (copy attached). An impetus for this letter was the immediately preceding DIAND-GY decision that the Anvil Range mines will not return to production and therefore steps should be taken to move to final closure. In the same letter it was also stated that government will ultimately be responsible for the reclamation of Type II mine sites.

In the draft licence prepared by Deloitte & Touche Clause 72 sets out a requirement for the submission of a final abandonment and remediation plan by December 31, 2006. While the present licence is requested in the name of Deloitte & Touche Inc., acting as the Receiver for Anvil Range, both GY and DIAND recognize that the receivership may cease before the 2006 deadline. However, through the January 20th letter, government has affirmed its commitment to completion of final abandonment, including a final closure and remediation plan. This task is to be carried out through the Type II Mines Project Office. The governments are in the formative stages of developing a project team to oversee the development of the abandonment plan, with discussions in progress with First Nations on their involvement.

Consultation with First Nations:
Chapter 6 of the DTA sets out a number of provisions which requires the participation of First Nations in the final abandonment of the Type II Mines. In the case of the Anvil Range Mines Section F, of Appendix H specifically identifies the First Nations "affected" by these properties as the Ross River

Dena Council, the Liard First Nation, the Kaska Dena Council, and the Selkirk First Nation. We have entered Government-to-Government-to-Government (3G) discussions to develop tripartite participation in final closure planning with the Kaska and Selkirk First Nation.

Consultation With Other Stakeholders:
Our governments acknowledge the importance of transparent planning processes which provide interested parties with a means of providing their input to, and to be apprised of, closure plans, activities and studies. Consultation will occur with stakeholders, such as the Town of Faro and NGOs, to involve them in the preparation of the final abandonment plan. We expect to commence discussions with these other stakeholders later this Fall regarding possible participatory mechanisms and information sharing.

We support the licence requirement for an annual status report on closure planning and will ensure that the Receiver is provided sufficient information to allow its completion

Funding for Care & Maintenance Work and Abandonment Plan Preparation:
Until such time as the Receivership of Anvil Range is completed DIAND, through the Ontario Court directing the Receivership, has agreed to provide the necessary funds to meet the terms and conditions of a water licence issued by the Yukon Water Board.

Should the receivership terminate prior to the expiry of the licence the obligations set out it the licence for completion and submission of a final abandonment plan will be met by the will be met by the Governments of Canada and Yukon.

Yours sincerely,

David A. Sherstone

David A. Sherstone
Team Leader
Type II Mines Project Office (DIAND)
Indian and Northern Affairs Canada

Yours sincerely,

Marg Crombie

Marg Crombie
Director
Assessment & Abandoned Mines
Type II Mines Project Office
Department of Energy, Mines & Resources
Government of Yukon

cc: Mr Wes Treleaven, Deloitte & Touche, Toronto
Mr. Rod Snow, Counsel for the Kaska Tribal Council
Mr. Testloa Smith, Ross River Dena Council
Mr. David Silas, Selkirk First Nation
Mr. Liard McMillan, Liard First Nation
Mr. Vic Enns, Environment Canada, Whitehorse
Mr. Al Von Finster, Fisheries and Oceans Canada
Mr. Dave Power, CAO, Town of Faro

Indian and Northern Affairs Canada
Affaires indiennes et du Nord Canada

345 - 300 Main Street
Whitehorse, Yukon, Y1A 2B5

Your file Votre référence

Our file Notre référence

January 20, 2003

Distribution List
(see attached)

Update Anvil Range Mining Properties (Faro Mine)

We are writing to update you on our plans over the next several years for managing both the environmental care & maintenance and regulatory obligations at the Anvil Range mining properties. DIAND's goals are to advance the formal receivership of the Faro mine as rapidly as practicable, to renew the Faro and Vangorda water licences to 2008 and to prepare a Faro Mine Remediation Plan which will guide the ultimate clean-up. Because this activity will occur after the devolution of DIAND's Yukon resource management programs to the Government of Yukon, we expect these initiatives to involve all three levels of government and a number of other stakeholders, as well as incorporating public input.

Currently, the Anvil Range mines and assets are under the control of a court-appointed Receiver, Deloitte & Touche Inc. That company is undertaking the steps necessary under the *Companies Creditors' Arrangement Act* (CCAA) to wind up the corporate affairs of Anvil Range. At the same time, the Receiver has been responsible for on-site care & maintenance, including operating water treatment systems at both Faro and the Vangorda Plateau. This is being done to prevent environmental harm and protect public health and safety.

Additionally, the Receiver, funded by DIAND, is preparing material for an environmental screening under the *Canadian Environmental Assessment Act* (CEAA) and submission of an application for a water licence renewal. This would result in a new "care & maintenance licence covering the period from December 31, 2003 to December 31, 2008.

In conjunction with the Government of Yukon we are now planning the steps for establishing a Faro project team. This will result in the separation of the Receiver's role in Anvil Range's corporate affairs and site care & maintenance from that of completing the Faro Mine Remediation Plan.

Until the receivership of Anvil Range and its creditors are resolved through the courts, Deloitte & Touche will remain as Receiver. Included in its responsibilities will be the day-to-day water treatment and environmental care operations at the minesites. As the on-site agent Deloitte & Touche may also be asked to undertake urgent projects to reduce unacceptable risks to public health or prevent major failures of the mine's infrastructure.

The Faro project team will assume responsibility for the Faro Mine Remediation Plan with the goal of having it completed and approved prior to the expiry of the 2008 licence. This reflects the realization that the Faro and Vangorda-Grum mines will not return to production and thus government will be ultimately responsible for the reclamation of these sites.

Presently, DIAND and GY are in initial discussions over the make-up and operation of the Faro project team. We intend to involve First Nations at an early date, respecting and recognizing that the affected First Nations will have a special role in whatever process is developed.

Once the project team is announced you will be contacted and asked to participate in the planning process. In the interim, if you have any questions please contact one or both of us at your convenience.

Yours sincerely,

John Brown
Regional Director General
Yukon Region

Ian McGregor
Director General
Environment and Renewable Resources Directorate
Northern Affairs Program, DIAND
Ottawa

Distribution List:

Chief Jack Caesar, Ross River Dena Council
Chief Lucy McGinty, Selkirk First Nation
Tribal Chief Hammond Dick, Kaska Tribal Council
Grand Chief Ed Schultz, Council for Yukon First Nations
George McKenzie-Grieve, Manager Environment Protection Service, DOE, Whitehorse
Don Fast, Director-General, Pacific & Yukon Region, DOE, Vancouver
Gord Zealand, Chief, Northwest B.C. and Yukon Area, DFO, Whitehorse
Angus Robertson, Deputy Minister, Energy, Mines & Resources, Government of Yukon
Marg Crombie, Energy, Mines & Resources, Government of Yukon
Yukon Salmon Committee
Yukon Conservation Society
Wes Treleaven, Vice-President, Deloitte & Touche, Toronto
John Porter, Counsel, Ogilvy Renault, Toronto

Ross River Dena Council

ROSS RIVER, YUKON
Y0B 1S0

PHONE 969-2278

FAXED 09/26/03

September 19, 2003

COPY

Water Board Secretariate
Yukon Water Board
Suite 106, 419 Range Road
Whitehorse, YT Y1A 3V1

RECEIVED
SEP 25 2003

Attention: Judi White, Manager

Dear Sirs:

Re: Faro Application - Care and Maintenance - Water License No:QZ03-059

I am pleased to submit to you the enclosed intervention of Ross River Dena Council and Kaska Nation in this matter.

We request a public hearing be held on this application and give notice at this time of our desire to have standing at the hearing and to present evidence and make submissions to the Board.

At this time, we anticipate that Ross River Dena Council and Kaska Nation will be represented at the hearings by Rod Snow as legal counsel and Malcolm Foy as technical advisor.

Please provide a copy of all subsequent correspondence to Mr. Snow at Suite 200, 304 Jarvis Street, Whitehorse, YT Y1A 2H2.

Yours truly,

ROSS RIVER DENA COUNCIL

Per: Jack Caesar

Chief Jack Caesar

cc. Murray Leitch, Counsel for Deloitte & Touche, in their capacity as Interim Receiver of Anvil Range Mining Corporation

YUKON WATER BOARD

License Application QZ03-059

Intervention of Ross River Dena Council
on its own behalf and on behalf the Kaska Nation

1. This Intervention in Water License Application QZ03-059 (the "Application") is filed on behalf of the Ross River Dena Council on its own behalf and on behalf of the Kaska Nation. In this Intervention, references to the Kaska include the members of the Kaska Nation, namely Ross River Dena Council, Liard First Nation and the Kaska Dena Council.

2. The lands and waters involved in the Application are within the Kaska Traditional Territory. Before the mine was developed at Faro, Kaska used and occupied the mine site area and harvested the fish and animals in the region. Because of the development and damage to the land and waters, it is obvious that the Kaska can no longer use the land and animals at the mine site. The Kaska people have had very little benefit from the Faro mine. Since 1973 the Government of Canada has formally acknowledged the Kaska's outstanding claims to aboriginal rights, titles, and interests in and to those lands and waters. Similarly the Government of Yukon has acknowledged in agreements entered into with the Kaska that the Kaska have aboriginal rights, titles, and interests to the Kaska Traditional Territory. See the Bilateral Agreement between the Kaska and the Government of Yukon dated May 9, 2003, a copy of which is attached to and incorporated into this Intervention as Exhibit "A".

3. As a result of the Kaska rights, titles and interest in the lands and waters referred to in the application, Government has an obligation to consult with the Kaska regarding important decisions concerning the lands and waters. To date, the Kaska have not been adequately consulted regarding the Application, and the Kaska have not consented to the issuance of any water license under the *Waters Act* as requested in the Application. Neither this Intervention nor the participation of the Kaska in any Water Board Hearing shall constitute the consent

of the Kaska to the issuance of any water license to the applicant; the Kaska will consider any draft license prepared by the Water Board and only then decide whether they consent to the issuance of a License to the applicant under the *Waters Act*.

4. The Devolution Transfer Agreement between Canada and Yukon, which came into effect on April 1, 2003, recognizes the mine site as a Type II site to be funded by the Government of Canada, and recognizes that the Kaska are affected First Nations.

5. The primary concern of the Kaska, with respect to the Application, is that the environmental quality of water discharged from the mine site must be protected so that there will be no adverse effect on plants, fish and animals or their habitat. Specific concerns identified in this Intervention are intended to further this concern.

6. A water license should be issued to provide a regulatory framework for the on-going care and maintenance for the mine site. However, the Kaska are concerned that the applicant, Deloitte and Touche, in its capacity as an interim receiver of Anvil Range Mining Corporation, has provided no evidence of its financial responsibility to satisfy Section 12(4)(d)(iii) of the *Waters Act* which requires the Board to be satisfied of the applicant's financial responsibility with respect to: *"The satisfactory maintenance and restoration of the site in the event in any future closing or abandonment of that undertaking."*

7. The Kaska are concerned that the applicant does not have sufficient funds to satisfy this legal requirement for the short term, medium term, or long term. The Kaska understand that the Government of Canada is the only source of funds to satisfy this requirement of the *Waters Act* and submit that the Board should seek and rely upon an undertaking of the Government of Canada to fund all work necessary to maintain and restore the site in compliance with applicable laws.

8. The Kaska are ready, willing, and able to work with the Governments of Canada and Yukon and Selkirk First Nation on a Government to Government to Government ("G3") basis to develop, manage, and implement a long term closure, remediation and abandonment plan ("Closure Plan") for the mine site, and affected waters and believe it would be in the public interest and consistent with the objectives of the *Waters Act* for the Board to renew the License on terms and conditions that facilitate and do not impede such a process.

9. Based on recognition of the Kaska's aboriginal rights, titles, and interests and its other interests and privileges referred to earlier in this Intervention, it is fundamental that the Kaska have a meaningful role in the oversight of care and maintenance of the mine site. For this reason, the Kaska request that the License contain the following terms and conditions:

(a) The Licensee must consult with the Kaska on a regular and ongoing basis regarding its activities on the mine site. refer to TAC

(b) The Licensee must provide to the Kaska a copy of all reports submitted to the Board under the License and meet at least annually with the Kaska in Ross River or elsewhere to report on its activities, any significant data and information gathered in the monitoring program, and its plans for future activities.

10. The applicant has advised the Kaska that it is an officer of the courts and not an agent of the Government of Canada, and therefore does not have the same responsibilities to the Kaska as the Government of Canada. Given the applicant's total dependance on funding by the Government of Canada, the Kaska submit that the applicant should comply with significant policies of the Government of Canada when carrying out activities funded by the Government of Canada. In particular, the Kaska believe the License should require the Licensee to comply with the Government of Canada's Aboriginal Procurement Strategy in

- provide opportunities
- not a water licence issue.

find a

the purchase of goods and services necessary to carry on activities authorized or required by any License.

11. The Kaska believe that the License should relate solely to the temporary care and maintenance of the mine site during the 5 year proposed license. Preparation of a Closure Plan should be separated from the License and be funded by the Government of Canada with the work to be done in the manner that the G3 consider appropriate. The License should permit the Government of Canada to assume responsibility for:

- the final Closure Plan;
- all studies related to the Closure Plan;
- the application within the term of the License for approval of the final Closure Plan.

The License should be written in a way that allows the Government of Canada to assume those responsibilities by filing with the Board satisfactory undertakings and thereby releasing the Licensee from such obligations, without assigning the License and all of its rights and obligations.

12. The License should require the Licensee to integrate traditional knowledge with modern science and technical methodologies. The Kaska support the proposal for the conduct of terrestrial studies in conjunction with the community at Ross River and urge the Board to require the incorporation of traditional knowledge in that study and in other studies being undertaken by the Licensee.

13. The License should require the Licensee to take appropriate measures, such as fencing, to ensure that moose and other game animals cannot have access to the tailings area. Studies should be undertaken to determine whether the food chain has been impacted by the movement of airborne dust and metal fractions from the tailings area to the surrounding lands

and waters. The Kaska are concerned that the proposed "footprint" for the study area is too small and should be agreed upon with the Kaska.

14. Pursuant to the Rules of Procedure, the Kaska request the presence of an interpreter for Kaska speakers at the public hearing.

Ross River Dena Council
General Delivery
Ross River, YT Y0B 1S0
Ph: 867-969-2277
Fax: 867-969-2405

with a copy to:

Rod Snow
Davis & Company
Suite 200, 304 Jarvis Street
Whitehorse, YT Y1A 2H2
Ph: 867-393-5105
Fax: 867-667-2669

EXHIBIT""A"
License No. QZ03-05

BI-LATERAL AGREEMENT

BETWEEN:

THE GOVERNMENT OF YUKON, as represented by the Premier of Yukon ("Yukon")

AND:

THE KASKA, as represented by the Liard First Nation, the Ross River Dena Council, the Daylu Dena Council, the Dease River First Nation, the Kwadacha First Nation, the Kaska Dena Council, and the Kaska Tribal Council ("the Kaska")

WHEREAS:

Yukon acknowledged, in agreements entered into with the Kaska in January 1997, that the Kaska have aboriginal rights, titles and interest in and to the Kaska Traditional Territory in the Yukon,

The Kaska, Yukon and Canada have not yet concluded Kaska Agreements in respect of the Kaska's aboriginal rights, titles and interests in and to the Kaska Traditional Territory,

Canada has formally withdrawn from the negotiations for Kaska Agreements on the grounds that the Government of Canada's land claims negotiation mandate has expired,

In response to Canada's formal withdrawal from negotiations the Kaska have turned to the courts to protect their rights in and to the Kaska Traditional Territory,

The Kaska and Yukon have signed and started to implement a Letter of Understanding of February 26, 2003 regarding the steps that the parties will take to resolve the outstanding land claims issues as presented by Kaska during the signing,

The parties acknowledge that Yukon is not solely responsible for achieving a fair and equitable Transboundary Agreement with the Kaska

Dena Council and that the Government of Canada has the primary constitutional duties and responsibilities to the Kaska in that regard,

Representatives of Yukon and the Kaska have held discussions, on a government to government basis, regarding a number of important matters of mutual concern including the parties' mutual desire to establish, on a government to government basis, a partnership, including an economic partnership, between the Kaska and the Yukon in respect of the management, development and beneficial enjoyment of the lands and resources within the Kaska Traditional Territory in the Yukon,

NOW THEREFORE in consideration of the premises and the mutual covenants and agreements hereinafter set out, Yukon and the Kaska hereby agree with each other as follows:

1.0 DEFINITIONS

1.1 Capitalized words shall have the meaning assigned in the Umbrella Final Agreement signed by Canada, Yukon and the Council for Yukon Indians on May 29, 1993, unless the context otherwise requires.

1.2 "DTA" means the Yukon Northern Affairs Program Devolution Transfer Agreement which was entered into between Yukon and the Government of Canada in October, 2001.

1.3 "Kaska" means those individual Kaska who are eligible to be enrolled as a beneficiary under a Kaska Agreement.

1.4 "Kaska Agreement" means a Yukon First Nation Final Agreement with the Ross River Dena Council, a Yukon First Nation Final Agreement with the Liard First Nation, or a Transboundary Agreement with the Kaska Dena Council, and also includes any associated Self-Government Agreements.

1.5 "Kaska Business" means any corporation owned by a Kaska Band/First Nation and any joint venture in which the Kaska, a Kaska Band/First Nation, or any such corporation may participate.

1.6 "Kaska Traditional Territory" means that portion of the Kaska's traditional territory located in the Yukon Territory as shown on the map attached to this Agreement and marked as Schedule "B", and as shown in more detail on the maps entitled "Kaska Dena Nation Traditional Territory" which were signed by the leaders of the Kaska and submitted to government in or about November 1988.

1.7 "mirror resource legislation" means the legislation, including regulations, that Yukon will put in place as required by s.2.3 of the DTA.

1.8 "successor resource legislation" means the legislation, including regulations, that may succeed mirror resource legislation.

2.0 OBJECTIVES

2.1 The following objectives shall govern the relationship, on a government to government basis, between Yukon and the Kaska in respect of the management, development and beneficial enjoyment of the lands and resources within the Kaska Traditional Territory in the Yukon:

(a) the conclusion of just and equitable Kaska Agreements shall continue to be of the highest priority to the parties and Yukon and Kaska shall jointly make best efforts to re-engage Canada in negotiations towards Kaska Agreements;

(b) dispositions of interests in and authorizations for exploration work and resource development on lands and resources within the Kaska Traditional Territory shall be granted only in accordance with the process set out in 3.3, 3.4 and 3.5.

(c) sharing in any revenues accruing to Yukon from either the disposition of any interest in, or the development of, the lands and resources within Kaska Traditional Territory;

(d) sharing the benefits from the exploration and development of the lands and resources within Kaska Traditional Territory;

(e) Kaska participation in the management of lands and resources within the Kaska Traditional Territory, in accordance with the processes set out in 3.3, 3.4 and 3.5, and

(f) the desirability of fostering an economic partnership on a government to government basis between the Kaska and Yukon in respect of the development of the lands and resources within the Kaska Traditional Territory to allow and promote such development prior to the achievement of Kaska Agreements.

2.2 The parties shall execute such further documents as may be necessary to achieve the objectives of this Agreement.

2.3 Yukon shall ensure that the spirit and objectives of this Agreement are conveyed to all government departments and officials who may be involved in negotiations towards Kaska Agreements or in the management of lands and

resources in the Kaska Traditional Territory.

3.0 KASKA CONSENT

3.1 As soon as possible following the signing of this agreement, Yukon and the Kaska Dena Council shall enter into negotiations with a view to finalizing an agreement on the elements of a fair and equitable Transboundary Agreement particularly as concerns matters of primary concern to Yukon and the Kaska Dena Council. The Parties recognize that to complete a Kaska Dena Transboundary Agreement requires the participation of Canada.

3.2 Yukon agrees that it will, pursuant to Yukon legislation, make or execute regulations, orders, and other instruments satisfactory to the Parties in order to provide the Kaska or a Kaska Business mining tenures or rights to Ross River Dena Council land selection R15 on reasonable commercial terms, such rights to include the right to explore, develop, and mine that land.

3.3 Yukon shall not agree to any significant or major dispositions of interests in lands or resources or significant or major authorizations for exploration work and resource development in the Kaska Traditional Territory without consulting and obtaining the consent of the Kaska. Consultation and consent shall be required in particular for the following:

(a) Hard rock mines with a type A water license, coal mines, major hydro developments, major construction and linear projects such as highways and pipelines;
(b) Any other project subject to a level II screening process under the Yukon's Environmental Assessment Act;
(c) Major land use designations, and
(d) Such other similar matters which the working group established under 3.4 may recommend and to which the parties agree.

3.4 A working group consisting of equal representation from the Yukon and the Kaska shall be struck and given the task of establishing a process for the consent requirement set out in 3.3. To that end, the working group may propose changes to legislation, regulations and policies, practices and procedures. The process shall reflect the following principles:

(a) It must be transparent and timely;
(b) Consent will not be withheld unreasonably, and
(c) It must be consistent with existing Yukon First Nation Final Agreements

3.5 In respect of all other dispositions of interests in and authorizations for exploration work and resource development on lands and resources within the Kaska Traditional Territory, Yukon will meet all common law obligations to consult with the Kaska and accommodate their interests. For greater certainty,

Yukon will meet those common law obligations in respect of any dispositions of interests in land in a transboundary claim in the Kaska Traditional Territory.

3.6 The parties agree that Yukon will have met its obligations under 3.3 and 3.5 in respect of the recording of quartz and placer interests if, as soon as practical upon the coming into effect of the DTA, it amends the forms upon which quartz and placer claims or leases are recorded under the *Yukon Quartz Act* and the *Yukon Placer* so as to ensure that any person who wishes to record a claim is given timely notice that the lands where the claims are located are subject to unsettled aboriginal land claims.

3.7 In order to achieve the objective of having the Kaska share in any revenues and economic benefits flowing from the exploration and development of the lands and resources within the Kaska Traditional Territory, Yukon shall, upon the coming into effect of the DTA, take all necessary steps to achieve this result.

3.8 Whenever the Yukon proposes successor resource legislation, Yukon shall, in conjunction with the Kaska and other Yukon First Nations, establish a working group to consider options and make recommendations for the new legislation.

3.9 In order to facilitate resource development, Yukon and Kaska shall, on a government to government basis, develop a process of resource planning that takes into account an integrated strategy for all social and economic values within the Kaska Traditional Territory.

4.0 LAND CLAIMS

4.1 The parties agree to implement and build on the Letter of Understanding of February 26, 2003 regarding the steps that the parties need to take to resolve the outstanding land claims issues as presented by Kaska during the signing. A copy of that Letter of Understanding is attached to this Agreement as Schedule "A" and will include any understandings achieved by the parties.

4.2 During the term of this Agreement, the Kaska shall not seek to challenge the validity of either the DTA or the legislation giving effect to the DTA.

4.3 The adjournment by the Kaska Dena Council of the interlocutory proceedings against devolution scheduled for May 13-16, 2003 is a condition precedent to the coming into effect of this Agreement.

5.0 FINANCIAL MATTERS AND KASKA ECONOMIC BENEFITS AND ECONOMIC PARTNERSHIP

5.1 The parties agree, as soon as practicable upon signing of this Agreement, to implement and build upon the economic partnership described in paragraph

2(f) of this Agreement. As part of this partnership the parties shall discuss:

(a) requirements for Impact and Benefit Agreements between proponents and the Kaska in the various resource sectors and the appropriate triggers and thresholds for requiring such agreements,

(b) resource revenue sharing arrangements,

(c) Kaska access to resource revenue sharing from the Kotaneelee gas development, and

(d) Kaska preferential access to other economic opportunities in the Kaska Traditional Territory including the contract and employment opportunities associated with the clean-up, remediation and maintenance of all contaminated or abandoned sites.

5.2 Yukon acknowledges that the Kaska do not have the financial resources which are required to enable the Kaska to effectively prepare for and participate in the processes and initiatives referred to in this Agreement. Accordingly, the parties shall work together to identify financial and other resources for building Kaska capacity. Nothing in this Agreement shall be construed to impose any financial obligations upon the Yukon.

6.0 INTERPRETATION

6.1 This Agreement:

(a) shall not be construed so as to abrogate or derogate from, or define the content of, Kaska aboriginal rights, titles and interests in and to the Kaska Traditional Territory,

(b) shall not be construed so as to abrogate from any fiduciary duties or other obligations owed to the Kaska by either the Crown in right of Canada or the Yukon in respect Kaska of aboriginal rights, titles and interest in and to the Kaska Traditional Territory, and

(c) shall, be construed to be without prejudice to the Kaska's right to challenge the validity of devolution prior to the achievement of Kaska Agreements, except as expressly provided otherwise in this Agreement

6.2 The Schedules attached to this Agreement are intended to be an operative part of this Agreement.

6.3 The Parties agree that it is not their intention to replicate any of the provisions of this Agreement in any future Kaska Agreement.

7.0 TERM OF THIS AGREEMENT

7.1 This Agreement will be in effect for a period of twenty-four months, commencing on the date of execution. The parties will commence a review of the effectiveness of this Agreement six months before its termination date.

7.2 This Agreement may be terminated by either party by providing 60 days notice in writing.

8.0 DISPUTE RESOLUTION

8.1 Subject to 8.2 any disagreement as to the interpretation or implementation of this Agreement shall be referred to the principals for resolution.

8.2 This Agreement is without prejudice to the rights of the parties to refer any dispute to court except as provided in 4.2.

9.0 CONTACT REPRESENTATIVES

9.1 The Kaska:

Tribal Chief
Kaska Tribal Council
Box 530
Watson Lake, Y.T.
Y0A 1C0
Fax: (867) 536-2806

9.2 Government of Yukon:

Deputy Minister
Executive Council Office
Government of Yukon
Box 2703
Whitehorse, Y.T.
Y1A 1C6
Fax: (867) 393-6214

10.0 AMENDMENTS

10.1 This Agreement may be amended upon the written agreement of the parties.

THIS AGREEMENT MADE at the City of Whitehorse, in the Yukon Territory this 8th day of May, 2003.

THE KASKA

Chief Daniel Morris

Chief Jack Caesar

Deputy Chief George Miller

Chief Frank Dennis

Chief Emil McCook

Dave Porter, Chair, Kaska Dena Council

Hammette Dick, Tribal Chief, Kaska Tribal Council

GOVERNMENT OF YUKON

Premier Dennis Fentie

SCHEDULE A TO THIS AGREEMENT

LETTER OF UNDERSTANDING

BETWEEN:

– THE GOVERNMENT OF YUKON, as represented by the Premier of the Yukon

("Yukon")

AND:

THE KASKA, including the Liard First Nation, the Ross River Dena Council, the Daylu Dena Council, the Dease River First Nation, the Kwadacha First Nation, the Kaska Dena Council, and the Kaska Tribal Council as represented for the purposes of this understanding by the Tribal Chief of the Kaska Tribal Council

("the Kaska")

REGARDING the mutual desire of the parties to establish a process for addressing the unsettled land claims of the Kaska in respect of the portion of the Kaska Traditional Territory located in the Yukon.

THE PARTIES wish to confirm the following understandings:

1. As soon as possible following the signing of this Letter of Understanding:

a)Yukon shall provide the Kaska with an opportunity to provide a detailed briefing to the Yukon's cabinet and caucus regarding the outstanding land claims issues which must be resolved in order to achieve Kaska Agreements; and,

b) the parties shall establish a high level committee for the purposes of reviewing Yukon's land claim policies in relation to the settlement of Kaska Agreements.

2. The Kaska and Yukon shall make best efforts, following the briefing and the establishment of the committee referred to above, to establish a principals' meeting with the Minister of Indian Affairs for the purpose of attempting to re-establish negotiations towards Kaska Agreements.

SIGNED THIS 26th day of February, 2003, in the City of Whitehorse in the Yukon Territory.

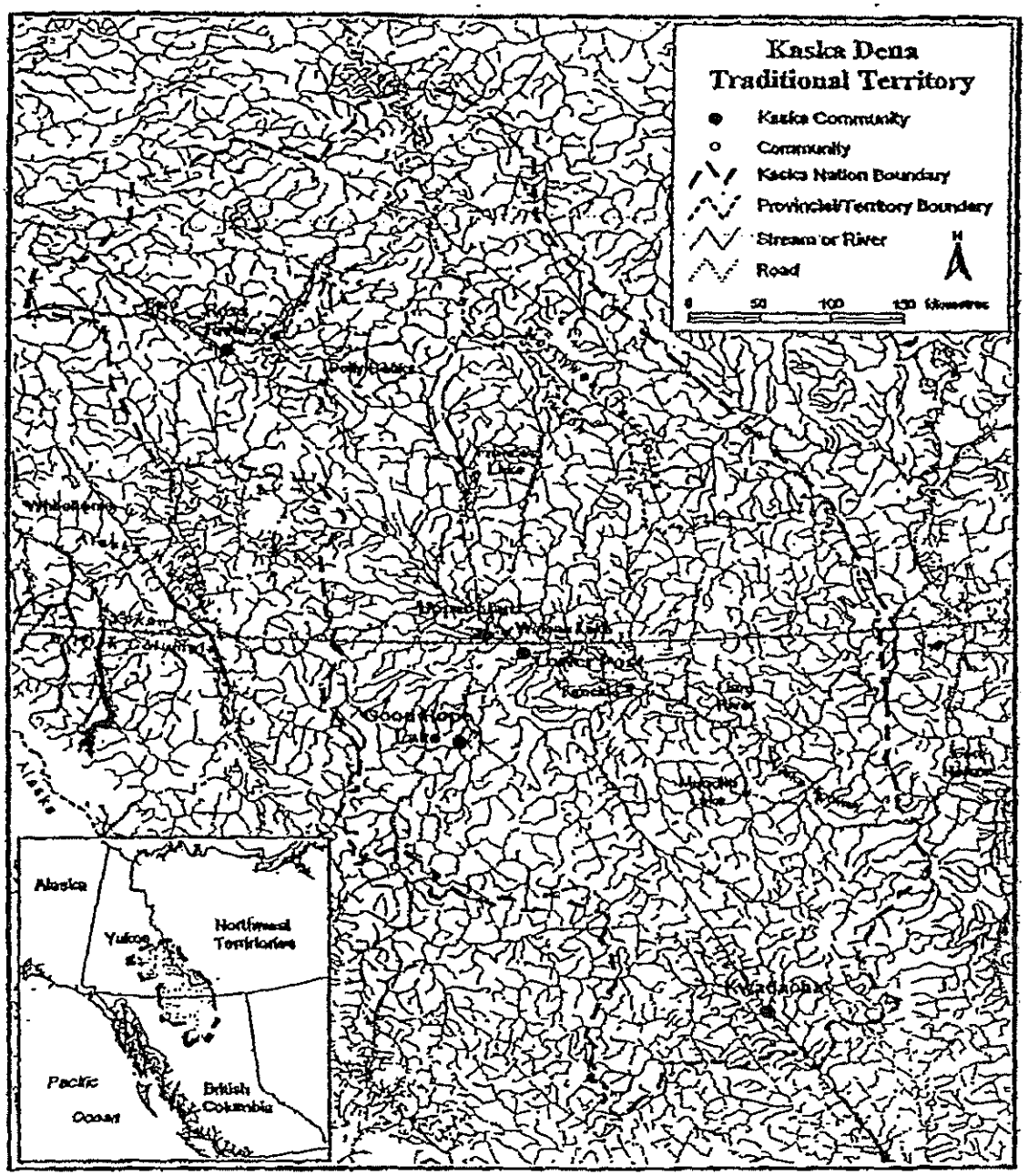
GOVERNMENT OF YUKON

Dennis Fentie, Premier of the Yukon

THE KASKA

Tribal Chief Hammond Dick

SCHEDULE B TO THIS AGREEMENT



Yukon
Environment
Box 2703, Whitehorse, Yukon Y1A 2C6

Water Resources Branch

September 26, 2003

Yukon Water Board
Suite 106-419 Range Rd.
Whitehorse, Yukon
Y1A 3V1

Attn: Ms. Judi White

Dear Ms. White:

Re: **Water Licence Application QZ03-059, Deloitte and Touche Inc.**
Renewal of Water Licence(s) for Faro and Vangorda/Grum Mine Sites

This letter and the attached report comprise the Government of Yukon's written regulatory intervention on water licence application QZ03-059, Deloitte and Touche Inc.'s application for renewal of water licences QZ95-003 for the Faro Mine Site and IN89-002 for the Vangorda/Grum Mine Site. A copy of this intervention has been provided to Deloitte and Touche Inc.. The Government of Yukon requests that the Board convene the scheduled hearing for this application.

The primary focus of this submission is related to care and maintenance issues, with some references to closure issues as they relate to the environmental assessment and licencing matters. In addition to this regulatory intervention, Government of Yukon is also providing input on closure related aspects of this application as part of the Type II Mines Project Office.

This intervention contains two components: (1) this letter which provides an overview of the Government of Yukon's position on the proposed care and maintenance renewal, and (2) the attached report which provides specific licencing recommendations, many of which are intended to address mitigation requirements specified in the *Environmental Assessment Act* (EAA) Screening Report. Where possible, the specific licencing recommendations are referenced against the proposed licence submitted by Deloitte and Touche Inc. (Exhibit 1.2). Recommended additions to the licence that are not related to any of the clauses in the proposed licence are contained in a separate section.

Overview

The Government of Yukon supports the concept of a "care and maintenance" licence which is intended to authorize continued care and maintenance activities on the site until 2008. This is supported by the findings of the Government of Yukon's Screening Report submitted to the Board under separate cover.

The Screening Report concluded that the proposed project is not likely to cause significant adverse environmental effects provided that the activities are carried out as proposed and that the mitigation specified in the Screening Report is implemented. Most significantly, the environmental assessment concluded that the effects of short-term care and maintenance are not significant, but acknowledged that environmental degradation due to the presence of the mine facilities will continue throughout the term of interim care and maintenance. The long-term effects, it determined, can only be addressed by the timely implementation of an effective final closure plan. In the meantime, the care and maintenance activities should be undertaken in a manner that limits the increase in environmental liability.

The impacts associated with ongoing acid rock drainage continue to accumulate at the site, and the impact on long-term closure costs is not well understood. Deloitte and Touche manages the site in accordance with an ongoing risk assessment process and is planning to implement an adaptive management plan, both of which are intended to proactively identify issues of upcoming concern, and trigger appropriate responses before environmental impacts escalate. The adaptive management plan is identified as a mitigation requirement in the EAA Screening Report and is focused on early indicators of impacts associated with areas of potential concern, especially acid rock drainage. Government of Yukon believes that these tools provide adequate certainty about unexpected events during the term of the care and maintenance licence.

Government of Yukon recognizes that the development and permitting of a final closure plan is complex and time consuming. The five-year care and maintenance licence offers an opportunity to complete research, evaluate options, design appropriate solutions, and undergo environmental assessment and regulatory review. Past experience suggests that this deadline will be difficult to achieve and thus will require ongoing cooperation between closure planning, regulatory and funding agencies. We support a transparent planning process so that interested parties are aware of the progress towards completion of the plan and can provide input. We are hopeful that such an approach will help to expedite the environmental assessment and regulatory review processes.

Conclusion

The Government of Yukon recommends that the Board re-licence the Faro and Vangorda/Grum facilities for the requested time period provided that the licence(s) incorporate(s) the recommendations contained in Government of Yukon's intervention.

If you have any questions about the recommendations contained in our intervention, please contact our office.

Yours sincerely,

Original signed by

Bengt Pettersson
A/Director, Water Resources Branch

c. W. Treleaven, Deloitte and Touche Inc., f. 416-601-5901
M. Leitch, Miller Thompson, f. 667-7665
M. Crombie, Type II Mines Project Office
M. McBride, Executive Council Office
V. Enns, Environment Canada, f. 667-7962
Chief J. Ceasar, Ross River Dena Council, f. 969-2405
D. Power, Town of Faro, f. 994-2728
J. Bowen, Department of Environment, f. 667-3641
A. von Finster, Fisheries and Oceans Canada, f. 393-6737

Att. Licencing Recommendations Report

GOVERNMENT OF YUKON REGULATORY INTERVENTION

September 26, 2003

Water Licence Application QZ03-059
Renewal of Licences for Faro/Vangorda/Grum Mines
Deloitte and Touche Inc.

Licencing Recommendations

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Section 1.0 of this report contains recommendations for modifications to the clauses in the Proposed Licence (Exhibit 1.2). Section 2.0 contains recommendations for additions to the proposed licence.

1.0 SPECIFIC RECOMMENDATIONS FOR MODIFICATIONS TO THE PROPOSED LICENCE

1.1 Annual Report (Clause 16)

1.1.1 Specific Licencing Recommendation

Government of Yukon recommends that Paragraph 16(b) (Exhibit 1.2) be revised as follows:

- **Detailed records of water use by source, and water balances for the tailings facility, Main Pit, Zone II Pit, Grum Pit and Vangorda Pit including, as appropriate, data and/or calculated estimates for water levels, pumping rates, inflows and outflows.**

1.1.2 Rationale

The clause presented in Exhibit 1.2 is generalized from the existing licence for the Faro Mine (Exhibit 7.2), and the generalization does not accurately reflect Government of Yukon's understanding of the intent of the original clause. Completing a water balance for each mine site would be very challenging and may require data collection and modeling that is well beyond the scope of the proposed monitoring programs. While some of this work may be undertaken as part of closure planning, it is not practical to include it as part of the annual report. Rather, Government of Yukon recommends that the licence establish a requirement for the licensee to provide water balance information for specific mine components, with a focus on areas that are subject to water management activities by Deloitte and Touche. This is more consistent with Government of Yukon's understanding of the existing reporting requirements.

1.2 Spills and Unauthorized Discharges (Clause 17)

1.2.1 Specific Licencing Recommendations

Government of Yukon recommends that the Spills and Unauthorized Discharges section of the proposed licence be expanded to include several contingency plans that are provided in Chapter 8, "Accidents and Malfunctions" of the Water Licence Renewal Application Report, Exhibit 1.4. In addition, the proposed licence should specify a requirement for the licensee to act in accordance with a general spill contingency plan. Government of Yukon recommends that Clause 17 be replaced with the following:

(1) The Licensee shall, within 90 days of the effective date of this licence, submit a spill contingency plan that identifies responses for spills and/or potential

spills of fuels and/or hazardous chemicals. Should a spill or unauthorized discharge occur, or seem likely to occur, the Licensee shall implement the spill contingency plan. Should a spill occur, the Licensee shall immediately contact the 24-hour Yukon Spill Report number (867)667-7244. A detailed written report on any such event, including dates, quantities, parameters, causes and other relevant details and explanations, shall be submitted to the Board not later than fifteen days after its occurrence.

(2) The Licensee shall ensure that the Vangorda Pit/Vangorda Water Treatment Plant Pipeline is equipped with automatic sensors that automatically shut down pumping in the event of a pressure drop in the pipeline. When the Vangorda Pit/Vangorda Water Treatment Plant Pipeline is operating, the licensee shall conduct daily inspections of the pipeline, and shall immediately address any noted deficiencies.

(3) Should a break of a pipeline occur on the site, the Licensee shall immediately implement the appropriate contingency plan contained in Chapter 8 of the Water Licence Renewal Application Report (Exhibit 1.4) and shall immediately advise a Water Resources' inspector of the occurrence.

(4) Should (i) a breach of the Faro Creek Diversion, (ii) a breach of the Rose Creek Diversion, (iii) a breach of the Vangorda Creek Diversion, or (iv) failure of a the Vangorda Creek Haul Road Culverts occur, the Licensee shall immediately implement the appropriate contingency plan contained in Chapter 8 of the Water Licence Renewal Application Report (Exhibit 1.4) and shall immediately advise a Water Resources' inspector of the occurrence.

(5) For each of the contingency measures identified in (3) and (4) above, the Licensee shall prepare a Communications Protocol to ensure timely notification of downstream water users, and shall consider the Communications Protocol to be part of the appropriate contingency plans.

1.2.2 Rationale

Fuel Spill Contingency

It is Government of Yukon's understanding that Deloitte and Touche has a spill contingency plan in place. As with other projects, this plan should be filed with the Board, and implementation of the plan should be established as a licence requirement to minimize the effects associated with any spill events. The need for a spill contingency plan is identified as mitigation in the Screening Report prepared under the *Environmental Assessment Act* (EAA).

Pipeline Failure Contingencies

The Water Licence Renewal Application Report identifies possible accidents and/or malfunctions associated with pipelines on the site. Several of the pipelines are very long and are used to transport contaminated water. In most cases, water released from pipeline failures would remain contained within the mines' water management drainage areas, and would not report directly to any surface receiving waters. A failure of the Vangorda/Grum Water Treatment Plant pipeline could however, result in the release of contaminated water directly to surface waters.

In all cases of pipeline failures, the implementation of planned contingency responses provides greater confidence that quick, coordinated responses will be implemented in the event of failures. This is particularly critical for the Vangorda/Grum Water Treatment Plant Pipeline. The automatic sensors and daily monitoring proposed by Deloitte and Touche for this pipeline reflect the greater importance place on ensuring its integrity. The response is not as critical for failures that do not report directly to surface waters but the contingency plans remain important because failures could result in impacts on physical structures or on groundwater quality.

Contingencies for Failure of Water Conveyance Structures

Deloitte and Touche has identified contingency plans related to the failure of several major water conveyance structures on the mine sites. These structures represent some of the highest likelihoods of failure at the site, and the implementation of planned contingency responses provides greater certainty that coordinated actions will be undertaken to address such failures and prevent significant consequences. In general, the impacts associated with failures of these facilities can be managed in the short-term, but coordinated responses are critical in re-establishing functional conveyance structures.

Communications Protocols

In Sections 8.4.3.2 and 8.4.3.8, the Screening Report identifies the need to ensure timely communication with potentially affected downstream communities and water users in the event of a failure. Plans for communications should be prepared in advance and should form part of the contingency plans for the failure events.

1.3 Waste Discharge Descriptions (Clauses 24 and 30)

1.3.1 Specific Licencing Recommendations

Government of Yukon recommends that Clause 24 of the proposed licence (Exhibit 1.2) be revised to more accurately reflect the wording contained in licence QZ95-003 (Exhibit 7.2). In addition, further clarification should be provided about deposit of waste to groundwater. Government of Yukon recommends that Clause 24 be replaced with the following:

- **Without restricting the generality of the definition of "waste" in the Act, "waste discharge" in this licence includes *all effluent discharges from the mine, whether to surface water or groundwater. For greater certainty, this includes contaminated surface drainage prior to entering receiving waters, tailings pond effluents, water treatment plant effluents, pit effluents, tailings pond seepage, pit seepage, waste dump seepage, and tailings pond groundwater seepage.***

Government of Yukon recommends that Clause 30 of the proposed licence be revised as follows to include areas of known discharge to ground water, specifically in relation to the tailings impoundment.

- **The effluent standards listed in this licence shall be met at all points of entry to all receiving waters including, but not limited to, sampling stations X5, X13, V2 and V25 BSP. *In addition, specifically for the period of this interim care and maintenance licence, the effluent standards shall apply at the groundwater trigger locations in the vicinity of the Cross Valley Dam identified for the Adaptive Management Plan in relation to water quality in the Rose Creek Aquifer.***

1.3.2 Rationale

The proposed clause 24 is revised from the existing Faro licence, but the generalization of this clause to address the whole property appears to change the intent of the clause.

The wording in the existing licence (Exhibit 7.2) states that waste discharge includes "tailings pond groundwater seepage" in addition to "tailings pond seepage." The inclusion of both items with the specific reference to the tailings pond establishes the intent that "waste discharge" includes the deposit of contaminated water from the tailings impoundment into the groundwater.

On the other hand, the wording in Exhibit 1.2 seems to suggest that the "waste discharge" designation applies to seepage escaping to surface from the ground and mine facilities. The difference between the intents of the two clauses is further highlighted by the phrase "entering receiving waters." While this phrase appears in the wording of Exhibit 7.2, it appears that it was intended to apply only to contaminated surface water.

Government of Yukon has proposed wording for clause 24 that is intended to clarify that deposits of waste to groundwater are regulated under the *Waters Act*: the interpretation which appears to be the intent of the clauses in Exhibit 7.2.

Government of Yukon has recommended the explicit application of effluent standards for discharge from the tailings impoundment at the Cross Valley Dam, whether those discharges are via surface water or groundwater. The effluent standard should be considered as an interim measure. Further evaluation of the relationship between

groundwater and surface water will be required in order to establish scientifically defensible effluent limits that address the long-term closure objective of meeting CCME guidelines in Rose Creek. Until modeling is completed, it is not possible to determine whether the current effluent limits are applicable, too lenient or too restrictive. In the meantime, the proposed effluent limit provides a mechanism to ensure that severely contaminated groundwater does not escape from the mine site prior to decisions being made about management actions.

1.4 Modifications and Construction (Clauses 31 to 33)

1.4.1 Licencing Recommendation

Government of Yukon recommends that Clauses 31 to 33 of the proposed water licence be either deleted or modified to remove the apparent broad authorization for modification of water retaining structures on the site. Should the clauses be retained, they should only contain authorization for maintenance of structures, where maintenance is consistent with maintenance activities described in the Dam Safety Guidelines (Canadian Dam Association, 1999). Maintenance activities authorized without further review and approval should be limited to those that are necessary to remediate the condition of structures so that they again meet the original design criteria.

1.4.2 Rationale

Clauses 31 to 33 of the proposed licence are carried forward from the existing licence for the Faro Mine (Exhibit 7.2). These, in turn, have been carried forward with little change from licence Y2L3-2098, issued in 1979. These clauses may have been appropriate for operating licences at the Faro Mine, especially where they pertained to planned construction or raises of tailings dams or modifications to diversion structures. The conceptual plans for these modifications were the subject of water licence renewal and amendment applications that led to the issuance of various licences. For this licence however, no major modifications are planned, and Deloitte and Touche has not provided any details for such modifications. As such, authorization for completing such modifications should not be contained in the licence.

Government of Yukon recognizes that maintenance activities may be required on existing mine facilities. The scope of maintenance is substantially less than that of modification. As such, the clauses could be revised to provide authorization for maintenance works. In this case, the maintenance activities should be limited to the types of activities anticipated by the Dam Safety Guidelines. In some cases, even these types of activities may require further regulatory review, depending on licencing/permitting thresholds. For earthen structures, the Dam Safety Guidelines in Section 3.3 describe maintenance as follows:

> "Earthfill structures require maintenance work directed essentially to controlling seepage and erosion, in order to prevent deterioration of structures and development of seepage paths.

Annual or long-term maintenance programs for earthfill structures may include regular maintenance of instrumentation, rip-rap and crest maintenance and repair, control of vegetation and burrowing animals, slope stabilization, drainage system maintenance, and removal of upstream debris, to assure the safety of the structure."

1.5 Notification of Inspectors (Clause 34)

1.5.1 Licencing Recommendation

Government of Yukon recommends that Clause 34 requiring notification of an inspector prior to instream construction should be revised to establish similar notification requirements for all construction and or maintenance activities on water retaining structures.

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1.5.2 Rationale

Notification requirements should be established for construction or major maintenance activities in relation to water retaining structures.

1.6 Studies Relating to Care and Maintenance (Clause 59)

1.6.1 Specific Licencing Recommendations

Government of Yukon recommends that the proposed Clause 59 general requirement to complete care and maintenance studies be modified by including the following specific requirements for completion of studies, submission of reports, and implementation of results.

Assessment of Terrestrial Metal Contamination Effects

(1) The Licensee shall carry out an assessment of terrestrial metal contamination effects related to the Faro Mine and shall, no later than December 2005, submit to the Yukon Water Board a study report that:

- **a. provides detailed results of the study including delineation of contaminants in the terrestrial environment and estimates of proportional contributions of current and historic sources,**
- **b. evaluates the need for mitigative actions by comparing the study results to appropriate benchmarks and/or by evaluating the data through Human Health and Ecological Risk Assessment, and**
- **c. as necessary, recommends appropriate mitigative actions for the duration of the care and maintenance period.**

(2) The Licensee shall consult with the Technical Advisory Committee to seek advise on the design of the above study, and shall provide annual progress

reports on the status of the study to the Technical Advisory Committee and as part of the annual report.

(3) In Annual Reports for 2006 to 2008, the Licensee shall provide follow-up reporting on the implementation of mitigative recommendations contained in the above report. For each recommendation, the Annual Reports should identify the status of the implementation and/or reasons for choosing not to implement a recommendation.

Grum Pit Management Study

- **The Licensee shall, no later than June 30, 2004 submit to the Yukon Water Board, a Grum Pit Water Management Study Report that includes:**
  - **a. A review of the pit filling rate,**
  - **b. A determination of the maximum desired water elevation for the pit,**
  - **c. A pit filling projection, and**
  - **d. An assessment of management options.**

Treatment Sediment Management Plan

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(1) The Licensee shall, no later than June 30, 2004 submit to the Yukon Water Board, a Care and Maintenance Water Treatment Sludge Management Plan for the treatment sludge produced at all water treatment facilities including the Faro mill water treatment system, the Intermediate Dam water treatment system and the Vangorda/Grum water treatment plant. The Plan shall include characterization of sludge, evaluation of chemical stability, assessment/evaluation of management alternatives and selected management approaches.

(2) After submission of the above plan, and unless directed otherwise by the Board, the Licensee shall implement the management approaches described in the Plan.

(3) Prior to the implementation of the above plan, the Licensee shall ensure that all treatment sludge is disposed of in a secure location so that if it becomes chemically unstable and releases metals, the resulting effluent will be subject to an effective treatment system.

Investigation of Tailings Outside of the Rose Creek Tailings Facility

- **The Licensee shall, no later than January 30, 2005 submit to the Yukon Water Board, a report characterizing the extent and impacts of surface deposited tailings outside of the Rose Creek Tailings Facility at the Faro mine. As appropriate the report may include recommendations for short-term mitigation measures.**

1.6.2 Rationale

In general, Government of Yukon's recommendations with respect to care and maintenance studies are intended to establish clear requirements for completion of the studies, with established reporting requirements and deadlines. Specific comments on each of the studies are identified below.

Assessment of Terrestrial Metal Contamination Effects

As described in the Water Licence Renewal Application Report (Exhibit 1.4) and the EAA Screening Report, in 2002 Deloitte and Touche completed an initial study of metal contamination in terrestrial environmental components. The study concluded that levels of some metal contaminants were higher in the vicinity of the mine than at background sites. As a result, Deloitte and Touche has proposed a study to further evaluate the extent of contamination including an evaluation of additional terrestrial species. The study is also intended to identify sources of contamination and compare results to appropriate benchmarks to evaluate potential impacts. Through this study, Deloitte and Touche intends to identify the need for mitigative actions during the term of the care and maintenance licence. The need for this study is identified as a mitigation requirement in the Screening Report.

Grum Pit Management Study

Deloitte and Touche has advised that the Grum Pit is filling more quickly than originally anticipated. The water in the pit currently does not meet effluent discharge standards. As a result, Deloitte and Touche has proposed to evaluate the filling rate and management options in anticipation that action will eventually need to be taken to address water management in the Grum Pit. Government of Yukon supports this proactive approach and has therefore recommended that the licence establish specific requirements and deadlines for this study. The need for this study is identified as a mitigation requirement in the Screening Report.

Treatment Sediment Management Plan

Since start-up of water treatment facilities for care and maintenance, there has not been a comprehensive evaluation of sludge management options for water treatment sludge at the mine facilities. In accordance with the requirements of the Vangorda operating licence, there was an earlier evaluation of sludge management options for the Vangorda Water Treatment Plant, but these options may have now changed since the overall water management regime at the site is substantially changed from that used during operations. The ongoing need to treat water from the Faro Pit has increased the amount of sludge produced on the site. The management of this sludge has never been evaluated.

As water treatment continues on the site, sludge with very high metal contents will continue to accumulate. The stability of metals in the sludge has not been evaluated. As

a result, the sludge should be characterized and appropriate management alternatives should be identified and implemented as soon as possible. In the meantime, the sludge should be placed in locations where runoff will be subject to effective water treatment. The need for this study is identified as a mitigation requirement in the Screening Report.

Investigation of Tailings Outside of the Rose Creek Tailings Facility

As identified in the Water Licence Renewal Application Report (Exhibit 1.4), there are several areas outside of the tailings impoundment where tailings have been deposited. In general, these deposits likely occurred as a result of spills during operations. The extent and impacts of these tailings deposits is not well understood, though in some areas it is clear that there are substantial ecological effects (i.e. vegetation kill zones downstream of the tailings impoundment). In order to ensure that significant impacts are addressed and minimized, Government of Yukon supports completion of the proposed study.

1.7 Adaptive Management Plan (Clauses 62 and 63)

1.7.1 Specific Licencing Recommendations

Government of Yukon recommends that Clauses 62 and 63 of the proposed licence be replaced with the following:

(1) The Licensee shall, no later than April 30, 2004, submit to the Yukon Water Board for review and approval, an Adaptive Management Plan Implementation Protocol that includes:

- **a. A detailed description of monitoring locations, parameters and frequencies for each of the Adaptive Management Plan triggers,**
- **b. An identification of key Adaptive Management Plan indicators, including an analysis that demonstrates that the proposed monitoring locations and frequencies is expected to be adequate to detect sustained and significant changes in the indicators,**
- **c. Descriptions of existing baseline conditions that will be used for comparison to monitoring data, including confirmation that existing baseline data is adequate for detection of changes, and/or proposals for collection of additional baseline data,**
- **d. Methods and models for evaluating Adaptive Management Plan data to confirm the status of indicators,**
- **e. Measurable triggers and thresholds that will be used for determining the need for adaptive management actions, and**
- **f. Achievable adaptive management actions including schedules for implementation upon reaching a threshold.**

(2) For adaptive management in relation to water quality in the Rose Creek downstream of mine facilities, the "baseline" shall be established as the period from 1999 to 2002.

(3) **For adaptive management in relation water quality in Vangorda Creek, the adaptive management staged response for the Grum Rock Dump should be expanded to include the Vangorda Rock Dump area.**

(4) **The Licensee shall, as part of the annual report, provide:**

a. **assessments of all Adaptive Management Plan monitoring results versus thresholds in accordance with the above protocol,**

b. **evaluations of the effectiveness of the indicators and monitoring in achieving the objectives of adaptive management monitoring, and**

c. **details of any actions that have been or will be taken in response to the exceedance of any Adaptive Management Plan thresholds.**

1.7.2 Rationale

The implementation of the proposed Adaptive Management Plan is one of the key mitigation measures identified in the EAA Screening Report. The need for an Adaptive Management Plan is a result of the recognition that there are ongoing environmental impacts associated with the Faro and Vangorda/Grum mines. By reaching a positive determination, the screening report has determined that these impacts are not currently significant. However, it recognizes that the impacts could change during the term of the proposed licence, and that the impacts could become significant if not addressed. By accepting the proposal for an Adaptive Management Plan, the screening report further concludes that, for each of the potential issues identified in the Adaptive Management Plan, there are practical and feasible methods of mitigating the identified effects should they occur.

To serve as effective mitigation, the Adaptive Management Plan must identify appropriate indicators, monitoring locations, "baseline" conditions, thresholds, triggers, and practical, feasible response actions. The Adaptive Management Plan provided as part of Exhibit 1.4 is conceptual, especially with respect to monitoring locations, indicators, thresholds and triggers. The details of the Adaptive Management Plan must be provided as soon as possible so that it may be implemented early in the term of the licence. Government of Yukon's recommendations are intended to provide deadlines for completion of the details of the Adaptive Management Plan so that this early implementation may occur.

For the Adaptive Management Plan in relation to Water Quality in Rose Creek downstream of the tailings impoundments, Deloitte and Touche proposed to evaluate changes against a baseline established on the basis of data from the period 1998 to 2002. In 1998, immediately after Deloitte and Touche assumed responsibility for the site, there were several upsets of treatment systems. As a result, the 1998 data will skew the "baseline" for evaluation of changes. In accordance with the mitigation specified in the Screening Report, the adaptive management "baseline" for Rose Creek downstream of the tailings impoundments should be limited to data from 1999 to 2002.

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As described in the Screening Report, the Town of Faro has expressed concern about the impacts of the Vangorda Rock dump on water quality in Vangorda Creek. For the Grum

Rock Dump, the proposed Adaptive Management Plan includes a trigger location in Vangorda Creek downstream of both rock dumps. Consistent with the mitigation measures specified in the Screening Report, the response actions for this adaptive management item should be broadened to include both the Vangorda and Grum Rock Dumps.

Since the Adaptive Management Plan will provide ongoing feed-back about areas of concern identified during the environmental assessment, the annual reports need to include details of adaptive management monitoring and decision making. In addition, to address the follow-up requirements specified in the Screening Report, the annual report needs to contain a requirement to confirm that the selected indicators and monitoring programs are appropriate.

1.8 Comprehensive Risk Assessment (Clauses 64 to 66)

1.8.1 Specific Licencing Recommendations

Government of Yukon recommends that Clause 64 of the proposed licence be revised as follows to establish an explicit requirement for submission of details of the Comprehensive Risk Assessment.

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- **The Licensee shall, no later than March 31 of each year of this licence, submit to the Yukon Water Board, a summary of the Comprehensive Risk Assessment. The summary report shall identify the elements evaluated, hazards, risk rankings and priority elements requiring responses. It shall also provide a summary of the decision making process used in evaluating and ranking the risks.**

Clause 66 should be revised to require that the annual report contain a reconciliation of risk assessment recommendations versus actions taken.

- **In the annual report required to be filed by the Licensee under this licence, the Licensee shall report on each of the priority action items identified in the previous year's Comprehensive Risk Assessment, including evaluation of the effectiveness of actions taken, or reasons for not taking the action(s) on priority elements.**

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1.8.2 Rationale

Upon assuming responsibility for the site, Deloitte and Touche began utilized risk assessment as its primary tool to guide its decisions about site activities. As described in Exhibit 1.4, Deloitte has produced a Comprehensive Risk Assessment, and updates this assessment frequently. In general, this approach helps to ensure that potential adverse environmental effects are addressed in a proactive manner. The risk assessment summary reports will provide explanations about decision making on the site and these explanations should be provided to the Board so that interested stakeholders can have a

better understanding for Deloitte and Touche's management decisions. As agencies and the public develop an understanding of the reasons for certain actions, this transparency of decision making will likely help to build support for the selected care and maintenance approaches.

1.9 Technical Advisory Committee (Clauses 67 to 70)

1.9.1 Specific Licencing Recommendations

Government of Yukon recommends that the objects of the Technical Advisory Committee (TAC) be revised to establish a role for the TAC in the development of plans for ongoing reduction and/or prevention of increases of environmental liability. The following item should be added to the list of objects:

- **To share and exchange technical data, ideas, concepts and plans for ongoing reduction and/or prevention of increase of environmental liability during the term of this licence.**

1.9.2 Rationale

As described in Section 8.2.1 of the EAA Screening Report, several environmental assessment reviewers raised concerns about the potential for ongoing and accelerated increases in environmental liability at the Faro and Vangorda/Grum mine sites during the course of the proposed care and maintenance licence. Primarily this concern relates to the ongoing oxidation of acid generating rock and tailings. We recognize that, in the absence of effective control mechanisms, the oxidation of acid generating materials continues on the site, and depending on circumstances, could accelerate. The acid rock drainage continues to produce soluble metal contaminants that will eventually have to be addressed as part of closure planning. The increase in soluble contaminants will likely lead to increases in ultimate closure costs.

In light of the above concerns, Government of Yukon recognizes that, in the long-term, prevention of Acid Rock Drainage is likely to be more cost-effective for many mine components. However, the appropriate approaches for dealing with acid-rock drainage at this site have not been fully explored, and Government of Yukon supports the continued care and maintenance activities provided that closure planning and implementation proceeds in an expeditious manner.

Continued vigilance is critical in ensuring that potential increases in environmental liability are anticipated and addressed. Government of Yukon's recommendation that these issues be considered by the TAC is consistent with the mitigation specified in the EAA Screening Report. In addition, it is Government of Yukon's expectation that Deloitte and Touche will continue to address issues of increased liability with the Type II Mines Project Office and regulatory agencies.

The TAC, or a similar committee may also be able to play a valuable role in closure planning. Although the licence does not address any role for the TAC in relation to closure planning, it may be prudent for the closure planning team to consider establishing a relationship with the TAC or a similar committee and seeking its input during closure planning.

1.10 Rehabilitation and Abandonment (Clause 72)

1.10.1 Specific Licencing Recommendation

Clause 72 of the proposed licence should be revised to include a requirement for annual reporting of closure planning status. The following additions should be made to Clause 72:

- **The Licensee shall, no later than March 31 of each year of this licence, submit to the Yukon Water Board, a status report on closure planning for the Faro and Vangorda/Grum mine properties. The status report shall contain, but is not limited to, the following:**
  - **a. A summary of closure studies completed in the past year,**
  - **b. Proposals for studies to be carried out in the coming year,**
  - **c. Status and interim results and/or analyses for ongoing studies,**
  - **d. Status of overall closure planning including, as available, closure objectives,**
  - **e. Significant outstanding data and information gaps, with proposals and schedules for addressing these gaps, and**
  - **f. An updated detailed schedule for completion of the Final Closure and Reclamation Plan by the established deadline.**

1.10.2 Rationale

Government of Yukon supports the general concept that the licence establish a deadline for submission of a Final Closure and Reclamation Plan. This is consistent with the mitigation specified in the EAA Screening Report. As described in the Screening Report, the positive determination can only be reached on the understanding that a final closure plan will be implemented following the proposed interim care and maintenance period. The care and maintenance activities are intended to minimize the ongoing accumulation of environmental liability, but it is only through the implementation of the closure plan that significant adverse environmental effects can be avoided in the long-term.

The implementation of the closure planning mitigation as specified in the Screening Report is extremely important, including trying to achieve the "objective of receiving approval prior to the expiry of the proposed licence." The development of the plan is very complex and ongoing status reporting will provide the planning team, the Board and regulatory agencies with periodic opportunities to assess the progress of closure planning. With other licences, similar status reporting requirements have been useful in ensuring the timely completion of complex planning programs. Periodic status reporting will also

provide other interested parties with an opportunity to understand the closure planning process.

Government of Yukon understands that the responsibility for the status reporting will fall to the closure planning team. As a result, we have recommended that this reporting be completed separately from the annual report which will be the direct responsibility of the licensee.

1.11 Abeyance Clauses (Clause 77)

1.11.1 Specific Licencing Recommendation

Clause 77 of the proposed licence should be revised as follows:

- **The Licensee shall not be required during the term of this licence to carry out the licence terms set forth in Schedule D, which terms remain part of this licence, but are held in abeyance for the term of this renewal only.**

1.11.2 Rationale

Government of Yukon's recommended wording is intended to make it clear that the "abeyance clauses" remain part of the licence.

1.12 Schedule A – Water Quality Monitoring

1.12.1 Licencing Recommendation

Government of Yukon recommends that stations on Guardhouse Creek be added to the water quality monitoring network. There should be two stations: one upstream of the area where Upper Guardhouse Creek passes through the toe of the waste dump, and one downstream of this potential area of impact. These samples should be collected and analyzed four times per year for ICP total and dissolved metals, pH, temperature, field conductivity, TSS, SO_4 and NH_3.

1.12.2 Rationale

In Section 5.2.2.3, of the Water Licence Renewal Application Report (Exhibit 1.4), Deloitte and Touche proposes ongoing monitoring of Guardhouse Creek to evaluate the impact of seepage from adjacent rock dumps. This monitoring is not identified in the water quality monitoring schedule, although it is our understanding that the monitoring is currently carried out. Therefore, we recommend that it be incorporated into the monitoring and reporting schedule.

1.13 Schedule B – Biological Monitoring

1.13.1 Licencing Recommendation

Government of Yukon recommends that the Schedule B of the draft licence be revised to include a requirement for monitoring of fish presence and metal content in fish tissue. This monitoring should be done every two years, concurrent with the required monitoring of benthic invertebrates, and the monitoring should be consistent with previous fish presence and metal content monitoring so that the data can be used to evaluate trends.

1.13.2 Rationale

In the follow-up program specified in Section 9, the EAA Screening Report identifies the need for periodic monitoring of fish presence and metal contents in fish tissues. This information is primarily required for closure planning and should be incorporated as part of the biological monitoring schedule.

1.14 Schedule C – Physical Monitoring

1.14.1 Licencing Recommendations

Specified Earthworks

The listing of earthworks to be inspected as part of the annual inspection should be revised as follows: (1) at the Faro mine site, item (d) should be described as the "North Fork Rock Drain including the crest and slopes of the haul road in this vicinity and the crest and slopes of adjacent rock dumps," and (2) at the Vangorda/Grum mine site, the Little Creek Dam should be added to the list.

Geotechnical Performance Monitoring

Government of Yukon recommends that the Geotechnical Performance Monitoring proposals should be revised as follows:

- **The Monitoring schedule and locations for readings of geotechnical performance monitoring instrumentation will follow the recommendations of the professional engineer, which will be a component of the engineer's annual inspection reports.** ***Notwithstanding the recommendations of the engineer, the Licensee shall monitor water levels in all piezometers and temperatures in all thermistors associated with water retaining structures no less than twice annually, where two of the measurements shall be taken at least 4 months apart. The licensee shall report the results of piezometer and thermistor monitoring in the annual report.***

Dam Safety Review

Government of Yukon recommends that Schedule C be revised to include a requirement for the completion of Dam Safety Reviews for water retaining structures in 2007.

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(1) The Licensee shall, no later than 2007, and in accordance with the specifications in the Dam Safety Guidelines, complete a "Dam Safety Review" for all water retaining structures (including dams, dykes and diversions) and appurtenances, including but not limited to the Intermediate Dam, Cross Valley Dam, Rose Creek Diversion Canal, Little Creek Dam, and the Grum/Vangorda Water Treatment Plant Clarifying Pond.

(2) Prior to November 30, 2007 the Licensee shall submit, to the YWB for review and approval, a Dam Safety Report prepared by its dam safety reviewer. The Dam Safety Report shall be prepared in accordance with the specifications in the Dam Safety Guidelines and shall:

- **a. document the Dam Safety Review and its results,**
- **b. clearly specify any recommendations for maintenance, operation, surveillance, reporting and emergency preparedness, and,**
- **c. document the follow-up on recommendations of previous Dam Safety Reports and inspection reports.**

(3) The Licensee shall submit, with the above Dam Safety Report, its planned response to each recommendation in the Dam Safety Report, including schedules for completion or explanations for delays or for not acting upon recommendations.

(4) The Licensee shall, as part of each Annual Report, provide details of maintenance, inspection and surveillance activities undertaken in that year, in relation to dam safety. This Condition does not authorize the completion of works that are not specifically authorized elsewhere in the licence.

1.14.2 Rationale

Specified Earthworks

Government of Yukon recognizes that the list of earthworks specified in Schedule B is not intended to be exhaustive. Regardless, the Little Creek Dam should be added to the list because it is a relatively important structure due to its containment of non-compliant water. Also, the Town of Faro has expressed specific concern about this structure in relation to impacts on Vangorda Creek.

The description of the North Fork Rock Drain should be enhanced to ensure that it includes all of the relevant earthworks that are related to the rock drain.

Geotechnical Performance Monitoring

In Chapter 5 of the Water Licence Renewal Application Report (Exhibit 1.4) Deloitte and Touche makes several references to twice yearly monitoring of dam safety instrumentation. Schedule B however, provides for monitoring as required by the engineer. It is likely that the engineer's recommendations will include a monitoring program at least as rigorous as that identified in the application. Regardless, the licence should ensure that twice yearly monitoring occurs by establishing it as a requirement in the monitoring schedule.

Dam Safety Review

Government of Yukon has recommended that the licence establish a requirement for Dam Safety Review in accordance with the Dam Safety Guidelines. In general, for the major structures on this site, the Guidelines envision a comprehensive review at least once every five years. Deloitte and Touche carried out a dam safety review for major structures in 2002. As a result, the next scheduled review should be completed in 2007. Although this is near the end of the proposed care and maintenance licence term, Government of Yukon recognizes that the major structures will likely continue to be required for some part of the closure plan implementation phase. As a result, the scheduled Dam Safety Review should be completed.

The Dam Safety Guidelines envision some cooperation with regulatory agencies in the completion of Dam Safety Reviews. This cooperation is reflected in the Government of Yukon's recommendations, as is the need for the licensee to provide its response to each of the recommendations of a Dam Safety Review.

The need for dam safety review is highlighted by the EAA Screening Report. In Section 8.4.2 on Effects of the Environment on the Project, the Screening Report discusses design criteria for water retention structures. The design of these structures to meet robust design criteria is necessary to sufficiently reduce the likelihood of failures that could result in significant adverse environmental effects. The Dam Safety Review process is intended to ensure that these structures continue to perform in accordance with appropriate design criteria.

2.0 RECOMMENDATIONS FOR ADDITIONS TO THE PROPOSED LICENCE

2.1 Water Management in the Rose Creek Tailings Facility, and Management of Discharge Conditions

2.1.1 Specific Licencing Recommendations

- **The Licensee shall, no later than April 30, 2004 submit a report that presents: (1) an evaluation of the care and maintenance water management regime in the Intermediate Pond considering the balance of risks associated with higher water levels versus increased and accelerating oxidation of**

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exposed tailings, (2) an investigation and evaluation of alternate discharge scenarios that incorporate the proposed hardness modification to the CCME zinc guideline for the protection of aquatic life, and (3) any recommendations for modifications to the water management regime to address the findings of the above evaluations.

closure.

2.1.2 Rationale

The EAA Screening Report, in Sections 8.2.1.1 and 8.2.1, specifies two mitigation measures relating to the management of water discharge from the tailings impoundment. First, the Screening Report discusses potential flexibility in application of a site-specific zinc water quality guideline for the protection of aquatic life. There has been some recent consideration of a zinc guideline that is linked to hardness. Second, the screening report recognizes the need to consider ongoing oxidation of tailings in the impoundment.

Water quality in Rose Creek downstream of the mine experiences some exceedences of the CCME zinc guideline of 0.03 mg/l. As noted in the Screening Report, a site-specific guideline linked to hardness would likely make discharge conditions less flexible at certain times of the year (i.e. summer when the guideline may be 0.007 mg/l), but substantially more flexible at other times of the year (i.e. winter, when the guideline may be 0.2 mg/l). This may provide additional flexibility in being able to meet CCME while still being able to discharge the same amount of waste from the mine facilities. The above recommendation would require an investigation of alternate discharge scenarios which may be effective in short-term reductions of environmental impacts.

As discussed in the Screening Report, several reviewers raised concern about the ongoing oxidation of tailings associated with continued care and maintenance activities. Deloitte and Touche has chosen to minimize water levels in the Intermediate Impoundment in order to minimize risks associated with the dam. This attempts to achieve a balance between physical stability risks and chemical stability risks. The balance between these risks should be addressed in order to ensure that the current management approaches are appropriate.

2.2 Town of Faro Water Supply Study

2.2.1 Specific Licencing Recommendations

- **The Licensee shall, no later than September 30, 2004, submit to the Yukon Water Board a report that describes the relationship between Vangorda Creek and the water supply wells for the Town of Faro. The study shall be completed by an independent expert and shall evaluate the potential for contamination of Vangorda Creek to affect the water supply for the Town of Faro. As appropriate, the Report shall include recommendations for monitoring programs, contingency plans and/or mitigative actions required to ensure protection of the water supply.**

OK

2.2.2 Rationale

Section 8.2.1.6 of the Screening Report identifies the Town of Faro's concerns about the integrity of its water supply. The Town withdraws water from wells located in an alluvial fan at the mouth of Vangorda Creek. The linkage between the wells and the surface flow in Vangorda Creek is not well understood and the Town is concerned that contamination of Vangorda Creek by ongoing metal release from the mine, or by failure of a water retaining structure could lead to contamination of its water supply. The mitigation specified in the Screening Report requires completion of a study investigating the relationship between the wells and Vangorda Creek.

2.3 Landfill

2.3.1 Specific Licencing Recommendation

- **Prior to utilization of the new landfill described in the Water Licence Renewal Application Report (Exhibit 1.4, Section 6.1.2), the Licensee shall ensure that surface water is directed away from the waste disposal area.**

2.3.2 Rationale

In Section 6.1.2.6 of the Water Licence Renewal Application Report (Exhibit 1.4), Deloitte and Touche proposes installation of surface water control ditches at the new landfill. In order to prevent further contamination of surface waters on the site, this requirement should be included in the licence.

2.4 Bioremediation Facility(ies)

2.4.1 Specific Licencing Recommendation

- **Prior to construction of any on-site bioremediation facility for the treatment of hydrocarbon contaminated soil, the Licensee shall submit to the Yukon Water Board for review and approval, a preliminary design for the facility and a proposed monitoring and reporting program.**

2.4.2 Rationale

The Water Licence Renewal Application Report provides conceptual designs for proposed bioremediation facilities. However, investigations necessary to determine sizing and location have not been completed. Once these details are resolved, further design details should be provided.

2.5 Reclamation of Oxide Fines

2.5.1 Specific Licencing Recommendations

(1) This licence does not authorize the remediation of oxide fines as described in the Water Licence Renewal Application Report (Exhibit 1.4, Section 6.3).

(2) Within two years of the effective date of this licence, the Licensee shall submit to the Yukon Water Board, an Oxide Fines Remediation Plan that proposes remediation measures for oxide fines that meet with long-term closure objectives.

(3) Notwithstanding the above prohibition, the Licensee may upon receiving approval from the Board, carry out remediation of oxide fines in accordance with an Oxide Fines Remediation Plan.

Dave. re-word.

2.5.2 Rationale

Although the Water Licence Renewal Application Report identifies remediation activities for oxide fines at both Faro and Vangorda/Grum, the Screening Report concluded that "the RA(s) were unable to adequately assess the environmental effects of the proposed activity." The Screening Report noted that the "proposed method of storage has no containment or impermeable bed cover and would not prevent contamination of the underlying ground." As a result, the completion of this activity should be specifically prohibited, since the licence will likely grant general authorization to carry out the activities in accordance with the application. Without specific prohibition, the licence would then grant de-facto authorization for these activities.

Government of Yukon recognizes that there may be significant contamination risks associated with the oxide fines. As a result, it is prudent to investigate remediation options. These options should be evaluated on the basis of long-term closure objectives, in order to identify the most cost effective solution. It is Government of Yukon's expectation that any plan for remediating the oxide fines would be developed in cooperation with regulatory agencies.

2.6 General Site Monitoring Protocol

2.6.1 Licencing Recommendation

Government of Yukon recommends that the General Site Monitoring Protocol attached as Appendix D of the Water Licence Renewal Application Report (Exhibit 1.4) be incorporated into the licence as a monitoring schedule.

2.6.2 Rationale

The General Site Monitoring Protocol contains a variety of small ongoing monitoring and surveillance items that are critical to understanding the condition of site facilities. This understanding helps to ensure proactive response to environmental concerns. As such, it

is important in ensuring that the care and maintenance period does not lead to significant adverse environmental effects. In order to ensure that these surveillance activities continue to be undertaken with care, Government of Yukon recommends that they be included in the licence.

Pacific & Yukon Region
91782 Alaska Hwy.
Whitehorse, Yukon
Y1A 5B7

26 September 2003

Judi White, Manager
Yukon Territory Water Board Secretariat
106-419 Range Road
Whitehorse, Yukon Y1A 2C6

File: 4484-37/A293

Dear Judi:

RE: Faro/Vangorda Water Licence Renewals – QZ03-059

Environment Canada (EC) and Fisheries and Oceans Canada (DFO) have completed a review of the above-referenced licence application. Our intervention is attached for the Board's consideration.

EC and DFO intend to intervene at the public hearing called for 27 October 2003 in Faro.

Respectfully,

Vic Enns P. Eng.
Head, Pollution Abatement
Yukon Division

Al von Finster
A/Chief
HEB
DFO Yukon & Transboundary

cc. Wes Treleaven – Deloitte & Touche Inc.
Dave Sherstone – DIAND
Marg Crombie – YTG
Jack Caesar – Chief RRDC
Lucy McGinty – Chief SFN

ENVIRONMENT CANADA

AND

FISHERIES AND OCEANS CANADA

BRIEF TO
YUKON TERRITORY WATER BOARD

WATER LICENCE APPLICATION
QZ03-059

FARO MINE COMPLEX

26 SEPTEMBER 2003

EC/DFO INTERVENTION QZ03-059

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EC/DFO STATEMENT OF INTERVENTION

26 Sept. 2003

WATER LICENCE APPLICATION: QZ03-059

1. INTRODUCTION

Environment Canada (EC) and Fisheries and Oceans Canada (DFO) have completed a review of Water Licence Application QZ03-059. We have also participated in the Regional Environmental Review Committee's evaluation of the project proposal under the Yukon Environmental Assessment Act, which is mirror legislation of the Canadian Environmental Assessment Act.

2. LEGISLATIVE MANDATE

EC and DFO have a shared mandate under the *Fisheries Act*. DFO has legislative responsibility for the *Fisheries Act* and by Prime Ministerial instruction, Environment Canada is responsible for the administration of Section 36 of the Act. This section prohibits the deposit of deleterious substances into waters frequented by fish. The overall objective of the two departments is to protect and conserve fish, ensure that water quality is not impaired, and that healthy fish habitat is maintained.

In addition to our responsibility under the Fisheries Act, EC and DFO have provided advice to the Yukon Territorial Government (YTG) for the screening of the application as required under the Yukon Environmental Assessment Act. EC and DFO have made several specific recommendations to YTG which are reflected in the *Environmental Assessment Act (Yukon)* (EAA) project screening report. We respectfully request that the Board incorporate into the licence the relevant recommendations contained in that document.

3. FISHERIES RESOURCES

The Faro Mine site comprises the Faro pit, waste rock deposits, mill, tailings and associated infrastructure and is located within the drainage basin of Rose Creek, tributary to Anvil Creek and thence the Pelly River. The Vangorda Plateau Mine site comprises the Vangorda and Grum pits and associated waste rock and infrastructure are located within the drainage basin of Vangorda Creek. Together these two sites are referred to as the Faro Mine Complex (FMC).

We are aware of no fisheries investigations in the Anvil/Rose or Vangorda Creek drainage basins prior to the development of the Faro mine, the construction of the town of Faro and of the roads and other infrastructure associated with the mine and townsite. No "baseline" in the general term of the word therefore exists of the fish utilization of these watercourses.

Fisheries resources by drainage basin are described below:

3.1 ROSE CREEK

Rose Creek has been extensively modified in the area of the FMC through various diversions, impoundments and stream crossings. Downstream effects have been related to the release of effluents and to spills of tailings and other substances.

There have been no recent studies on the fisheries resources of Rose Creek, save for those related to the Fresh Water Supply Dam. Most information available was gathered during the period when the mine was in operation and was collected in preparation for, or in response to, modifications to various plans or structures or the environmental review of various developments. Studies tended to be conducted during the open water period. Overwintering of fish was inferred through summer distribution and the extension of information from other streams in the general or more distant area.

Fish species documented in Rose Creek include round whitefish, burbot, juvenile Chinook salmon, slimy sculpin and Arctic grayling. Adult Chinook salmon have recently been reported by Faro residents as far upstream as the pumphouse located near the confluence of the North and South Forks of Rose Creek.

Arctic grayling are believed to be, generally, the most common and widespread species in the Rose Creek drainage basin. There are at least 4 separate populations in the drainage at the present time, pending the resolution of the fate of the Fresh Water Supply Dam. They are:

- The Dickens (Dixon) Lake population;
- The Freshwater Supply Reservoir and upstream tributaries population;
- The North Fork population upstream of the Haulroad Causeway; and
- the South Fork and mainstem Rose Creek population.

Ranges of abundance within these stocks has not been determined. The migratory behavior of the separate stocks is poorly understood.

Deloitte & Touche, in "Anvil Range Mine Complex – 2002 Baseline Environmental Information", report that juvenile Chinook salmon have been captured in the lowest reach of Rose Creek. We agree that utilization of the creek by juvenile Chinook salmon is probable, but have been unable to find the primary report detailing this. Overwintering of juvenile Chinook salmon in areas utilized for summer rearing is expected to occur if water quantity and quality is adequate. The reported appearance of adult Chinook salmon in 2003 is of considerable interest, as it may signal the re-establishment of an extirpated population.

The round whitefish and burbot have received little attention. Slimy sculpin are believed not to migrate to any great extent. They are found in all parts of the drainage basin where there is, or was, access and where there is a sufficient quantity of water of sufficient quality to sustain life throughout all seasons.

3.2 ANVIL CREEK

Lower Anvil Creek is comprised of the combined flows of Anvil Creek and Rose Creek, and flows directly to the Pelly River. There has been no physical disruption in this part of the

drainage related to the upstream mine. It is probable that there have been downstream effects resulting from tailings, effluents and other releases associated with the FMC.

Access to the creek is by air only, and there have been few studies or investigations. Species captured, and habitat utilization, is expected to be similar to that of Rose Creek. Of importance is that adult Chinook salmon have been observed downstream of the confluence with Rose Creek either spawning or in spawning condition.

3.3 VANGORDA CREEK

Vangorda Creek has been directly affected by infrastructure related to the construction of the Faro townsite. A culvert on the town access road constituted and may still constitute an obstruction to the upstream migration of fish. The lowest reach of the creek has been channelised, and there have been chronic problems with glaciation/aufeis buildup. The Vangorda and Grum developments are in the upper drainage basin and the Faro Mine access road parallels the west fork. The creek conveys effluents and drainage from the pits, waste dumps and associated infrastructure to the Pelly River.

Juvenile Chinook salmon utilization of lower Vangorda Creek for summer rearing has been well documented. Prior to the development of the Vangorda and Grum deposits, juvenile Chinook salmon were documented at both the start - and the end of the overwintering period. Overwintering was therefore considered to occur.

Other species documented in the creek include Arctic grayling, round whitefish, burbot, slimy sculpin and long-nosed suckers. It is likely that other species, such as northern pike, least cisco, and lake (hump back) whitefish also make excursions into the creek from the Pelly River.

3.4 PELLY RIVER

The Pelly River is a major tributary of the Yukon River. The Pelly and it's tributaries support Chinook salmon spawning populations. Juveniles emerging from the gravel in the spring are carried downstream from spawning areas and subsequently migrate up other, often smaller tributaries to rear. In the autumn, many or possibly most will overwinter in these tributaries. If the tributaries have sufficient water of sufficient quality to sustain life, the juveniles will survive and move to the ocean in their second year of life.

The non-anadromous fishery resources of the Pelly River in the area of Faro have been little studied. We expect that the species list includes, at a minimum:

Arctic grayling	Thymallus arcticus
Round whitefish	Prosopium cylindraceum
Slimy sculpin	Cottus Cognatus
Longnosed sucker	Catostomus catostomus
Northern pike	Esox lucius
Least Cisco	Coregonus sardinella

Humpback (Lake) Whitefish	Coregonus clupeaformis
Broad Whitefish	Coregonus Nasus
Lake Chub	Couesius plumbeus
Burbot	Lota lota
Inconnu	Stenodus leucichthys
Lake trout	Salvelinus namaycush
Arctic Lamprey	Lampetra japonica

Certain species will be common, with multiple stocks. The Arctic grayling is an example. Others will be rare, and only occasionally encountered. Lake trout and Arctic lamprey are examples.

4. OVERVIEW OF THE INTERVENTION

This licence application is unusual in that key activities which will proceed during the period of the renewal are not referenced in the proposed amendments set out in the draft licence submitted by the Receiver (i.e. care & maintenance only). These key activities relate to the development of the Final Closure and Remediation Plan (FCRP) which is proposed to be submitted to the Board not later than 31 December 2006. A supporting document submitted under the environmental assessment process and entitled "Anvil Range Mine Complex Closure Planning Project Management, June 2003, describes the DIAND/YTG view of the outstanding knowledge gaps which need to be addressed in order to complete closure planning. The actual program of closure studies being undertaken during FY 03/04 was largely defined at a Technical Workshop held by the Type II Mines DIAND/YTG office in late June 2003. This workshop included government and First Nation stakeholders, the Receiver and associated consultants. EC/DFO expect that the range of studies of closure options being investigated will narrow as these studies produce better information regarding costs, performance, uncertainties and reliability.

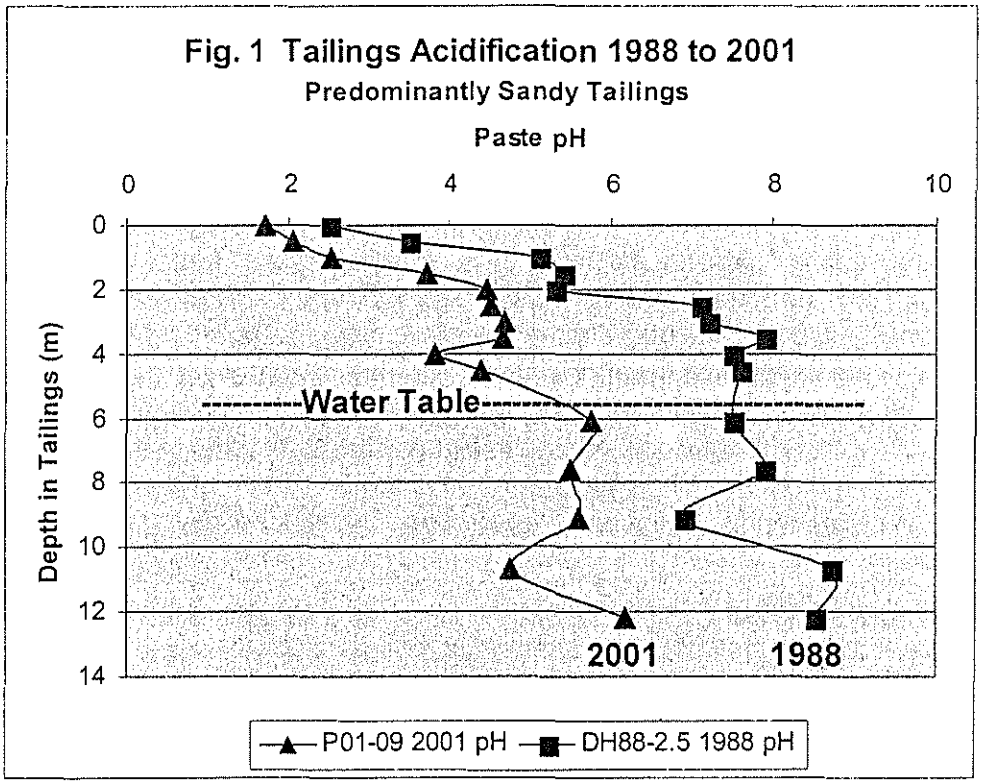
In this intervention statement EC and DFO will be providing the Board both with specific recommendations pertaining to the licence as proposed by the Receiver and with more general information which we expect will be helpful for the Board's consideration of the implications of the proposed schedule and approach for the completion of the FCRP.

5. IMPLICATIONS OF DELAY IN IMPLEMENTATION OF FCRP

The 2002 annual Faro and Vangorda reports demonstrate that, overall, the surface drainages entering the receiving waters are being maintained in compliance with existing licence effluent standards. It is our view that it would be incorrect to infer from this that there is little incremental increase in environmental liability or environmental risk related to any delays in the implementation of a closure plan.

It is generally recognized, based on existing evidence, that the level of contaminants seeping into surface and ground waters will continue to increase at the site for many years into the future. For some of these contaminant sources, such as the tailings and much of the waste rock dumps, there is little or no mitigation or collection of contaminants currently in place. This is largely because evidence that the metals are entering or are about to enter surface waters is lacking. Depending on the type of mitigation ultimately implemented, a reduction in contaminant release could result either relatively quickly or very slowly. For some sources the mitigation objective may be simply to try and prevent things from getting much worse and it is also likely that there will be sources for which the only practical option is to collect and treat the contamination in perpetuity.

Figure 1 compares the pH at various depths in the tailings for the years 1988 and 2001 at one location. The tailings have become more acidic at greater depths. This illustrates the advance of the acid generation mechanisms over that period.



In 2001 geochemical work was carried out at various depths within the tailings for 5 locations in the Original, Second and Intermediate tailings impoundments. Among other things this analysis determined the amount of soluble zinc which currently exists within the tailings at these locations. The zinc originally deposited in the tailings is insoluble in water but tailings oxidation has altered this zinc, creating soluble zinc compounds which readily dissolve in water and can be

flushed out of the tailings by the infiltrating rain and snowmelt. Environment Canada has estimated that there are now about 35,000 tonnes of soluble zinc within the tailings mass. This represents an estimated 6% of the total zinc contained in the tailings. There are two mechanisms which could release the soluble zinc to Rose Creek. One is the relatively slow leaching of this soluble zinc out of the tailings mass into the underlying groundwater which in turn flows into Rose Creek. The other mechanism would be the physical movement of the tailings themselves with their associated soluble zinc into the Creek as a result of the failure of a tailings dam due to flood or earthquake.

In addition to the increase in contaminants within the tailings, there is evidence that acid mine drainage processes are also advancing in the waste rock dumps and pits. Figure 2 depicts a recent significant increase in zinc in the drainage from the Main Waste Rock Dump at Faro. The delayed release of metals such as zinc and the sudden increases in concentrations of those metals in the drainage from waste rock dumps is typical and this behaviour suggests that the concentrations and loadings (total annual mass of metals in the drainage) will continue to increase with time (Nicholson, 2003, Pers. Comm).

Seepage at Old Faro Creek Channel near Toe Main Dump (X23) T.Zinc 1993 to end 2002

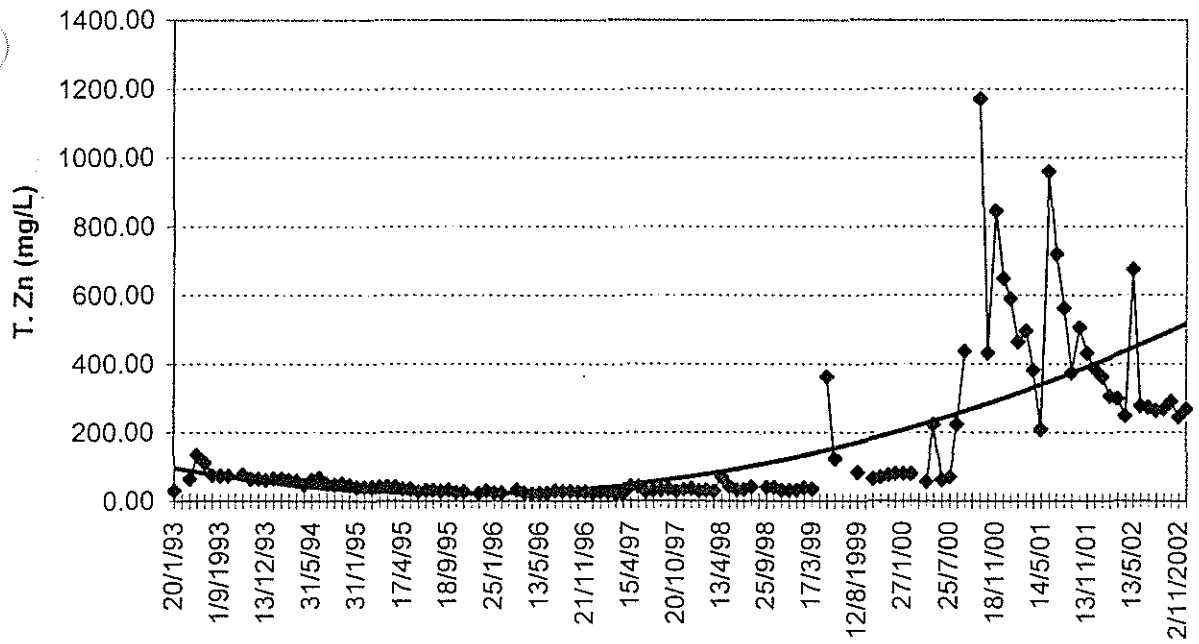


Figure 2

Figures 3 and 4 depict increases in dissolved zinc reporting to the Vangorda and Grum Pits respectively. The behaviour is similar to that shown by waste rock that is likely the main source of zinc loads together with leaching and drainage from pit walls and rock debris on the exposed benches of the pit.

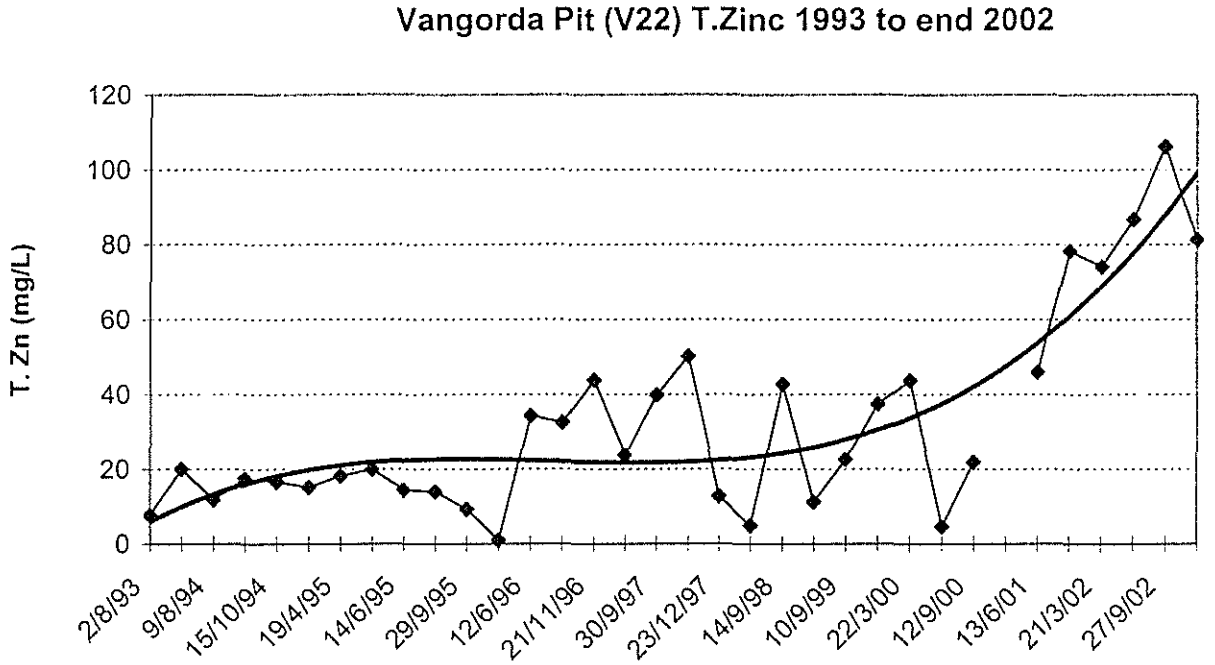


Figure 3

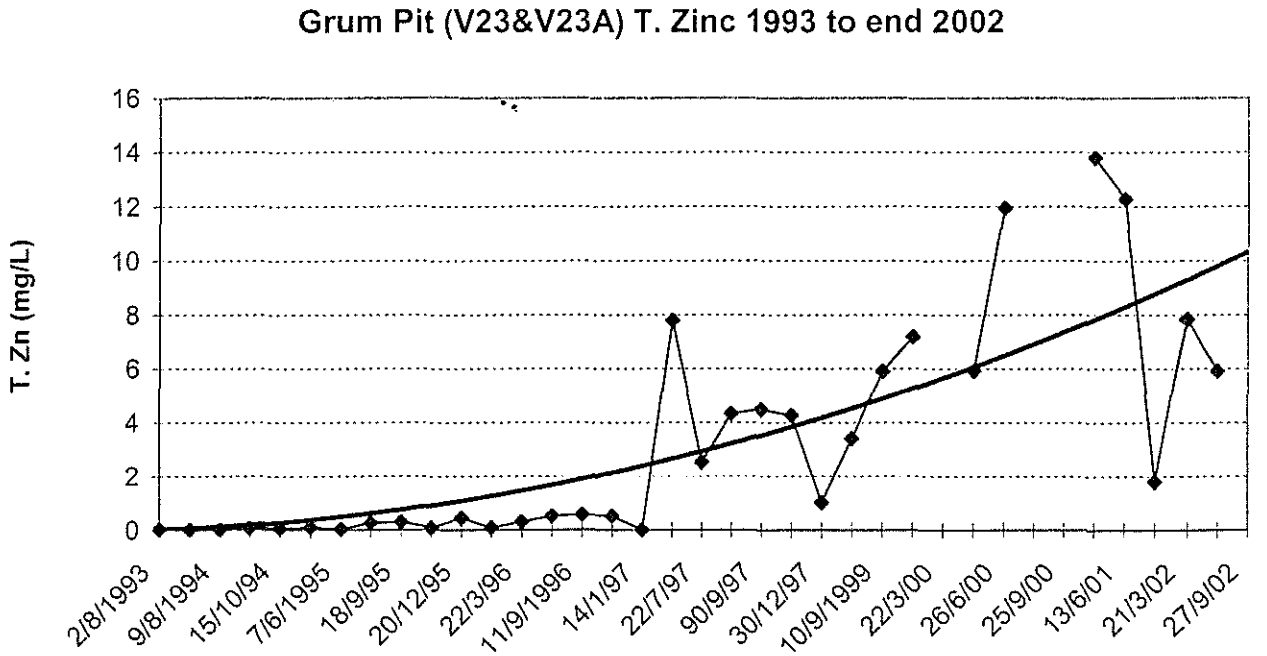


Figure 4

5.1 RISKS DUE TO PHYSICAL INSTABILITIES RESULTING IN TAILINGS RELEASE

It is difficult to predict how fast tailings could be flushed into Rose Creek and what volume of tailings in total could be released as a result of the failure of a dam. However, to provide context some scenarios are offered in the following Table:

Stream	Flowrate[1] (averages) m3/sec	% of Tailings Released	Period of Release	Dissolved Zinc Concentration in Stream[2]
Rose Creek	2.2	1 %	1 day	1820 mg/l
Rose Creek	2.2	0.1%	1 day	180 mg/l
Pelly River	400	1%	1 day	10 mg/l
Pelly River	400	0.1%	1 day	1 mg/l

Zinc level permitted in mine effluent: 0.5 mg/l.
CCME Zinc guideline for protection of aquatic life: 0.03 mg/l
Note 1: These are the average annual flowrates for these streams.
Note 2: This assumes the 2001 average levels of soluble zinc in the tailings (based on 35,000 tonnes total).

In the event of a dam failure, not only would the soluble zinc be rapidly flushed out of the tailings, the tailings solids themselves would be deposited downstream on the creek banks and would continue to oxidize and release contaminants for many decades. The streambed itself would be blanketed with tailings. It is hard to imagine how an effective clean-up could be achieved to mitigate the longer term effects. It is clear that a catastrophic failure that allows tailings release would have an impact on downstream waters that is many orders of magnitude. greater than any incremental failure represented by the slower release of zinc in tailings seepage. This is why there has been broad consensus that the tailings area currently represents the most significant environmental risk on the mine site. This is also why the existing licence stipulates that the closure criteria for the tailings dams must be based on conservative design standards – Probable Maximum Flood and Maximum Credible Earthquake. However, it is known that the structures as they exist now do not meet these criteria and the changes required to meet these standards have not yet been determined. This means that the current state of the impoundments pose a higher risk now when compared with what they are supposed to be designed for if they remain at final closure.

5.2 RISKS DUE TO CHEMICAL INSTABILITY OF THE TAILINGS

This risk stems from the ongoing oxidation of the tailings – a process which converts insoluble zinc sulphides into soluble zinc. By 2001 about 6% of the zinc in the tailings had been converted from zinc sulphides to soluble forms of zinc. This soluble zinc is being flushed by the rainfall and snowmelt which infiltrates the tailings each year and is moving downward through the tailings and into the underlying sand and gravel aquifer. The rate at which the tailings are oxidized and the zinc moves downward is largely controlled by how fine or coarse the tailings are at a particular location. About 1/3 of the tailings are predominantly sands and the evidence suggests that these tailings are heavily oxidized above the water table and that zinc is moving from the tailings into the underlying aquifer. About 1/3 of the tailings are predominantly slimes

or very fine materials that are somewhat coarser than clay. Oxidation is also progressing in these areas but more slowly and the evidence indicates that the soluble zinc has not progressed into the underlying aquifer below the tailings slimes yet. About 1/3 of the tailings area is intermediate between sands and slimes in character.

Although there is already zinc contamination of the aquifer below some parts of the tailings, the existing evidence suggests that this zinc has not yet moved downstream as far as the Cross Valley dam. It is expected that zinc from the tailings will eventually enter Rose Creek not far downstream of the Cross Valley dam.

Since 1992, Dr. Ron Nicholson has been involved, on behalf of Environment Canada, in the analysis of the tailings oxidation rates and zinc transport rates in the Faro tailings impoundments. In Appendix 1 to this intervention, Dr. Nicholson provides an analysis of the implications of delayed mitigation on the transport of zinc to Rose Creek. There are several areas of uncertainty related to the transport rates and attenuation mechanisms of zinc in groundwater that affect the predictions of when zinc could arrive in Rose Creek. Dr. Nicholson puts these uncertainties into context by conducting a sensitivity analysis on these parameters. The following is a summary of his conclusions:

5.2.1 SUMMARY OF APPENDIX 1 CONCLUSIONS: GROUNDWATER TRANSPORT OF ZINC FROM THE TAILINGS TO ROSE CREEK

The groundwater transport modeling results clearly show that the status quo conditions for Down Valley tailings at Faro will result in unacceptable zinc concentrations in Rose Creek in the future. It is very unlikely that covers or flooding of the tailings will alleviate this situation. Should contamination from tailings porewater begin to enter the aquifer at the high concentrations found in the tailings, one of the only means to prevent contamination of Rose Creek will be to collect and treat contaminated groundwater, probably for hundreds of years.

If the tailings are relocated, the potential impacts to Rose Creek will be less than those if the tailings remain in place. However, it is important to prevent the migration of significant quantities of tailings porewater (containing high zinc levels) into the underlying aquifer. Therefore, it is critical that the relocation of the tailings not be delayed. The model results showed that even short delays of a few years after zinc breakthrough to the aquifer (from the overlying tailings) could result in unacceptable contamination of Rose Creek. If significant amounts of dissolved zinc enter the groundwater in the aquifer, groundwater would need to be collected and treated for several decades even after the tailings were removed. Current monitoring suggested that zinc may not yet have entered the aquifer in significant quantities, but estimates suggest that this situation may change for the worse in the very near future. Relocation of the tailings should be a priority if Rose Creek is to be protected, and perpetual collect and treat operations are to be avoided.

5.3 RISKS RELATED TO WASTE ROCK DUMPS

If we had better information on the progress of oxidation in the rock dumps and the transport of the oxidation products, then an analysis similar to the one carried out for the tailings could be completed. However, the dumps are much more heterogeneous then the tailings. The sulphide waste rock is widely but, in many cases, randomly distributed. How much soluble zinc has been produced and how far the oxidation products may have migrated is poorly understood. There is one significant difference between the risks posed by the dumps compared to those posed by the tailings – the rock dumps themselves could not be transported into the downstream creeks by a flood or seismic event. Whatever happens, they are not going to move very far from where they are presently located. In contrast, the tailings can readily be transported by water – that is how they got into the tailings disposal area in the first place – as a water borne slurry from the mill.

6.0 EC/DFO RESPONSE TO PROPOSED LICENSE RENEWAL PERIOD

There are real environmental costs and risks to delaying the implementation of an effective closure plan for this mine site. Even having authorization to proceed with the FCRP by the end of 2008, as proposed, does not mean that implementation is likely to start on January 1, 2009. Conceptual plans will need to be developed into detailed plans and specifications. Funding will need to be secured from the Treasury Board of Canada. We are left with the question – are these additional five (plus) years requested to develop the FCRP and get it authorized a reasonable period of delay? We would answer this with a qualified yes and the qualifications are:

1) NO FURTHER DELAYS FOR HIGH RISK COMPONENTS

While we recognize that the Licensee is not at this time proposing any further delays beyond the December 31, 2006 deadline for completion of the FCRP, we also recognize that some closure option studies may be undertaken which will still be inconclusive and further delays may be proposed. The development of closure plans for site components that are believed to be quite sensitive to delays in implementation (high risk or higher incremental costs) should be completed within the proposed three year window for development of the FCRP or earlier if at all possible. For these particularly time sensitive contaminant loads or risks, it is very unlikely that EC/DFO could support proposals to further delay mitigation in cases where the studies for some mitigation options are still inconclusive and further investigation is proposed in the 2006 FCRP. The Faro tailings area falls into this category. Studies on tailings closure options have been produced for more than 20 years. There will always be reasons to wish that there was even more time for more analysis. The risks posed by these tailings supports the need for mitigation to be initiated on a priority basis.

2) PROGRESSIVE RECLAMATION

Opportunities for progressive reclamation that can be practically implemented prior to the next licence renewal should be actively sought and pursued. If decisions can be made on high risk mitigation components earlier and there is good evidence that the proposed mitigation represents the best available mitigation, the licence should provide a mechanism to expedite its implementation.

We believe there is broad recognition that relocation of the tailings into the flooded Faro pit would be the most effective means of achieving permanent physical and chemical stabilization of these tailings. Underwater disposal is still the most widely accepted and proven means to chemically stabilize acid generating materials. Storage in the pit would eliminate any risk of spilling tailings into the downstream creeks. This could never be said of the options that would leave the tailings behind dams and diversions in the valley. The best methods and the costs for tailings relocation are still to be determined.

7.0 EC/DFO SPECIFIC LICENCE RECOMMENDATIONS

7.1 Recommended Clause: Notwithstanding that the Licensee will submit a Final Closure and Reclamation Plan (FCRP) not later than 31 December 2006, at any time during the term of this licence, the Licensee may submit to the Board plans for implementation of one or several closure plan components. This submission shall include the justification for implementation separate from the FCRP. The Licensee shall implement the plan in accordance with the submission, except that, should the Board notify the Licensee within 90 days of the plan's submission that a public hearing will be held to discuss the plans, the Licensee shall not implement the plans before a public hearing has been convened and the Board has concluded it's deliberations.

RATIONALE

This clause addresses the concerns raised in section 6.2 above regarding Progressive Reclamation and the ability to develop and implement highly desirable closure plan components for which early implementation can be justified on the grounds that:

a) the approach being proposed is recognized to be the most effective mitigation available.
b) the incremental costs and risks associated with delay justify early action

By putting this clause in the licence the Board will be sending a clear message that this licence is not justification to put all implementation of closure plan components on hold for the next 5 or more years.

7.2 Recommended Clause: The Licensee shall, within one year of the signing of this licence, submit to the Board a sludge stability and detailed sludge disposal plan for those waste sludges generated by water treatment facilities operated at Faro and at Vangorda Plateau minesites. The Licensee shall implement this plan and update the plan as necessary to accommodate for any changes in sludge composition, sludge stability, or for any constraints in sludge disposal.

RATIONALE

Previous water use authorizations issued for the Vangorda Plateau project required sludge stability testwork and submission to the Board of a "...detailed sludge disposal plan." Environment Canada is aware of one sludge characterization and disposal plan report wherein

suggested disposal options are presented, and a later report which further detailed sludge characteristics for the Vangorda water treatment plant. Over the course of years since these reports have been filed: water to be treated has changed significantly in composition, and there is an expectation that the sludge formed from treating these waters would likewise change. To Environment Canada's understanding there has not been a formal report filed to the Board which, in an engineered or scientifically defensible manner, definitively details Vangorda treatment plant sludge disposal and long-term containment. Likewise there is great uncertainty regarding the current site practices for disposal of excess sludge and whether these practices support sludge stability, thus not contributing to future release of contaminants which must then be again dealt with.

The Faro operation has undertaken water treatment for several years: there has not been sludge stability testwork filed with the Board or with Regulators, and to our knowledge there has not been a formal filing by the operator which details the optimal final resting place for sludges which are produced from water treatment activities at the Faro site. It is in the interest of all concerned to have the operator review their water treatment activities from a sludge disposal / long-term stability viewpoint for the care and maintenance period, and formally file a plan to the Board. We note from supporting documentation filed with this application that the Licensee has suggested they will conduct similar studies. Environment Canada believes the requirement to undertake such studies is an important part of the proper operation of water treatment systems at the mine properties, and as such this requirement should be formalized within the licence.

7.3 Recommended Clause: The Licensee shall, within one year of the signing of this licence, submit to the Board a Water Treatment Contingency Plan to address remedial action to be taken in any instance where the operation of water treatment systems are unsuccessful to the degree that any discharge standard, particularly zinc, will be exceeded. The contingency plan will consider, but not be limited to: upsets due to unusual hydraulic loading, potential equipment or process failure, and other reasonable factors.

RATIONALE

There have been significant changes to water management/treatment at the Faro mine especially, but also at the mines associated with Vangorda Plateau. A contingency plan formalizing responses to address various potential upsets in water management and treatment would be worth developing. A similar clause was included in the previous water licence for Vangorda/Grum. Such a plan, if it exists, should be updated and expanded to include changes in water management/treatment which have occurred at Faro mine.

7.4 Recommended Clause: The Licensee shall submit to the Board a progress report on closure studies, detailing a summary of work done and main findings with respect to development of a final closure plan for the Faro and Vangorda Plateau minesites. Progress reports will be included as a component of each annual report submitted during the term of this licence.

RATIONALE

We recognize that closure studies are being undertaken as a site task apart from care and maintenance activities which are the main focus of the proposed licence. Nevertheless; we also recognize that the Licensee has seen fit to include in the proposed licence, wording which requires the Licensee file a final closure plan for the site by year end 2006. Environment Canada feels that it is in the public interest that the Board and interested parties be informed on an at-least yearly basis about progress toward developing a final closure plan. A similar requirement, to keep the public informed, was available in a previous licence.

7.5 Recommended Change Clause 10 : Modification to last sentence of proposed clause 10 (italicized here): *"However, it is also a condition ... waste that may be deposited that are more stringent than any conditions included in this licence, this licence shall be deemed, upon prescription...."*

RATIONALE

The changes suggested for the noted clause simply promote consistency with previous licence language and clauses, and also correct for grammatical errors found in the proposed licence clause.

7.6 Recommended Change: Modification to the last sentence of proposed Clause 14 (italicized here) regarding filing annual reports to the Board: "Subsequent reports shall be from January to December 31 of each calendar year, *and shall be submitted to the Board on or before March 1 of the year next following the year* reported."

RATIONALE

The included wording clarifies the responsibility and timing of filing annual reports to the Board for subsequent years of reporting. The inclusion promotes consistency with previous water licenses with respect to filing annual reports by March 31 of each year following that being reported.

7.7 Recommended Change Clause 19: Limit water withdrawal at Vangorda Plateau to a volume of 30 cubic meters per day. The suggested wording change (italicized here) is: "The Licensee may withdraw fresh water from the Grum/Vangorda fresh water supply pond, in a quantity not to exceed *30 m^3/day* for use in the Grum/Vangorda water treatment plant."

RATIONALE

The previous licence governing operations at Vangorda Plateau authorized fresh water withdrawal for a maximum volume of 6,000 imperial gallons per day (igpd). The previously authorized fresh water withdrawal volume (6000 igpd) is the correct volume of fresh makeup water adequate for mixing reagents for use in the Vangorda water treatment plant. It is unknown whether the pond referred to in the proposed licence could supply a greater volume of fresh water on a continuous basis.

The conversion of 6,000 igpd from imperial units to the metric system is on the order of 27.2 cubic meters per day (cmd or m^3/day) – a factor of 100 times less than that requested in the proposed licence. One alternate reason for freshwater use in the volume asked for would be to dilute effluent in the plant with clean water, and we do not believe it is the Licensee's intent to do so. Rather we believe the proposed fresh water use amount of 3,000 m^3/day is due to a calculation error on the part of the Licensee, in conversion from imperial units to metric units of measure, and that the correct figure should be 30 m^3/day (rounding up from the true conversion). This exceeds the fresh water volume required by the Licensee for reagent mixing at the Vangorda water treatment plant.

7.8 Recommended Change: Change to proposed Clause 33 (italicized here), and associated with proposed Clauses 31 & 32: The Licensee shall construct each structure and carry out work in accordance with the plans and specifications which have been submitted to the Board, *except that should the Board notify the Licensee that a public hearing will be held to discuss the designs: then the Licensee should not undertake the said modifications or construction until such time as the plans have been presented and approved through the public review. Any modifications and construction shall be undertaken* in accordance with sound engineering practice, supervised by *a* technically qualified person or *person(s)* and, where appropriate, inspected by a professional engineer.

RATIONALE

The noted clause and associated clauses proposed by the Licensee provide a wide degree of latitude with respect to modifying structures on the property without need for public or regulatory review. There may be instances where a proposed modification or construction of a structure has implications which reach beyond the care and maintenance phase – impacting closure scenarios for instance – for which the broader perspective available through a public review would be beneficial to long-term environmental security at Faro/Vangorda. The changes suggested above are consistent with a similar clause in a previous licence for this project; allowing for public review of changes or modifications to water conveying or impounding structures where it is deemed by the Board to be in the public interest to provide for such a review prior to that undertaking.

7.9 Recommended Change: Change to proposed Clause 57(d) (italicized here): Each sample shall be passed ... shall be analyzed for total metals listed in Section *27* of this licence.

RATIONALE

The proposed licence clause refers to "...Section 29..." which states "...no visible oils..." shall be present. The appropriate clause, taken from the proposed licence, would be clause 27 which lists metals and concentrations. We assume that the proposed clause is in error due to an oversight on the part of those individuals drafting the proposed licence.

7.10 Recommendation Change: Change to proposed Clause 64 and 66 (Italicized here):

64. The Licensee shall update the Comprehensive Risk Assessment detailed in the May 2003 report each year (the initial and each updated assessment being referred in this licence as the "CRA"). *Within 60 days of the effective date of this licence the Licensee shall submit the May 2003 report.*

66. In the annual report required to be filed by the Licensee under this licence, the Licensee shall report *any changes made to the CRA and* all activities carried out under the CRA, if any, during the applicable year.

RATIONALE

The CRA referred to by the Licensee has not been submitted to the Board and the May 2003 report referred to in the proposed licence has not been made public by the Licensee. It is of questionable utility to refer to an existing document in the proposed Licence when that document has not been seen by the Board nor is it proposed that future versions of the document will be made available.

The proposed wording establishes: a) what the document is (by requiring the May 2003 report to be filed), and; b) what changes are made to it from year to year. This avoids the need to submit the entire document each year as we anticipate there should be few changes from year to year.

It is apparent that the Licensee views this document as an important decision-making tool for the on-going Care & Maintenance of the property. This document should be filed for review.

7.11 Recommendation Change: Change to proposed Clause 72 (Italicized here): On or before December 31, 2006 ... the Licensee shall submit to the Board a Final Closure and Reclamation Plan ("FCRP") for the Faro *and Vangorda Plateau* mine sites.

RATIONALE

The proposed clause makes reference to a requirement for the Licensee to submit final closure documents for only the Faro Mine. This seems inconsistent to require a plan for the Faro mine only, when the intent is supposedly to provide for closure of the Faro and Vangorda Plateau sites through the combined licence. There is a need for comprehensive closure of the affected area which includes the Faro Mine as well as the area at Vangorda Plateau impacted by mining Vangorda/Grum. Indeed, there are professional consultants being tasked, on behalf of the Licensee as administrator, with developing a final closure plan for the Faro and Vangorda/Grum mines for submission to the Board and to Regulators. Perhaps this is simply an oversight made by those drafting the proposed licence. We would suggest that Vangorda Plateau be added to the proposed licence clause, or that there be wording in the definitions section of this combined licence which suggests that when "Faro" is mentioned; the requirement is implicit to Vangorda/Grum mines as well.

7.12 Recommended Change: Modification to proposed clause 74 (italicized here) to include lower Vangorda Creek for protection, and specifically clause 74(b): abandon the operation in such a manner that the long term water quality of Rose Creek downstream of the tailings facility, *and lower Vangorda Creek upstream of the confluence with the Pelly River,* shall comply with the Canadian Water Quality Guidelines for the protection of Aquatic Life, prepared by the Canadian Council for Ministers of the Environment, 1999, updated 2001.

RATIONALE

A previous licence set the water quality objective for the abandoned Faro Mine at Rose Creek downstream of the tailings facility, where there is evidence of fish use in the waters of Rose Creek. As there is overwintering utilization of lower Vangorda Creek by salmonids: it is only prudent that the new combined licence should similarly provide a water quality objective for Vangorda Creek which is protective of that reach where there is known utilization by fish stocks.

7.13 Recommended Change: Modifications to <u>Sch. A, Faro and Sch. A, Vangorda</u>:

- **Faro sample site R2 – same activities as other R-series monitoring points (sample WS, total and dissolved metals, other parameters, hardness, flow measurement);**
- **Faro Annual Seep Samples – should become Twice-annual Seep Samples (SF or 2A) with one sampling period to occur during freshet, and the listed monitoring sites as a minimum with additional sampling sites at the toes of external waste rock dumps where and when seepage is encountered;**
- **Vangorda Annual Seep Samples – should become Twice-annual Seep Samples (SF or 2A) with one sampling period to occur during freshet (SF), and the known monitoring sites complemented with additional sampling sites at the toes of external waste rock dumps where and when seepage is encountered.**

RATIONALE

Faro sample site R2 is a site which is included as a component of the biological monitoring program assessing various reaches of Rose and Anvil Creeks from upstream through and downstream of the Faro mine. As such, R2 is included in Schedule B of the proposed licence. Because this site is a component of the larger field program: it only makes sense to include the same sampling periodicity and monitoring parameters used for sites R1 through R7 for site R2.

Faro seepage monitoring should continue to be undertaken on a twice-annual basis (once during the freshet period). Previous monitoring of seeps from external waste rock dumps and other important sites internal to Faro indicate there can be a significant change in seepage water in terms of both flow volume and concentrations of metal contaminants discharged from individual seepage points. Indeed, some seepage discharge points flow only during the earlier or the later part of the snow-free period. In addition, the largest loadings and highest concentrations in drainage from rock dumps in the Canadian climate are often observed at or shortly after the spring freshet. In order to properly characterize the chemical loadings these seepage waters contribute to site water quality, and indeed to enable longer-term prediction of impact to receiving waters from these seepage point sources of contaminants, it is necessary to monitor

the seepage quality and quantity more frequently, at least twice per year (preferably near freshet and then in the Fall – SF).

Following the same rationale as for seep monitoring at Faro mine: Vangorda/Grum seepage monitoring should continue to be undertaken on a twice-annual basis (once during the freshet period). A twice-yearly monitoring of seepage points is not a new component to the licence. This is a recommendation which has been re-iterated in several seep survey reports produced for the Faro and Vangorda minesites (most recently in Report: SRK 1CD003.11; April 2003).

7.14 Miscellaneous Recommended Changes:

Modifications (italicized here) to:

- **Part A, Clause 15 – add a punctuation break after "...and IN89-002..." in order to separate and accentuate following text;**
- **Part C, heading – add "—*Care and Maintenance*" to the end of the heading to underscore that these are activities specific to this phase of the project and to distinguish this from modifications/construction intended for final closure of the sites;**
- **Schedule D, Clause 3 (e) – change "...slope crests wihta...." to "...slope crests *with a*...;"**
- **Schedule D, Clause 5 – change "...must been the effluent standards..." to "...must *meet* the effluent standards...;"**

RATIONALE
These are 'housekeeping' recommendations to correct for spelling, grammar, syntax, or interpretation of the intent relative to the section or clause highlighted in the proposed licence.

Stantec

APPENDIX 1 TO ENVIRONMENT CANADA INTERVENTION STATEMENT

QZ03-059
FARO MINE

GROUNDWATER TRANSPORT OF ZINC FROM THE TAILINGS TO ROSE CREEK

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INTRODUCTION

The Down Valley tailings at Faro, Yukon, have been the subject of several investigations to assess the potential for contamination of Rose Creek and other surface waterbodies downstream (Nicholson and Scharer, 1993; Nicholson *et al.*, 1995; Nicholson *et al.*, 1996; BEAK-Nicholson and Tibble, 1999). It was recognized early in the history of tailings deposition that there was a significant potential that the tailings could generate acid and leach zinc and other metals if deposited on land in a conventional impoundment. Several studies focussed on the potential mitigation or remediation of the Down Valley tailings (SRK, 1991; Robertson, 1996).

Field studies have confirmed that the tailings are generating acidic drainage with very high levels of zinc and sulphate, and that this contaminated drainage is migrating or has migrated downward through the tailings to the underlying aquifer (SRK, 1991; Gartner Lee, 2002). It has also been concluded that the groundwater system below the tailings will transport contaminated drainage from the tailings to eventually discharge into Rose Creek (BEAK, 1999; Gartner Lee, 2002).

The discharge of tailings drainage to Rose Creek will cause an incremental increase in zinc concentrations (above those from waste rock and other sources) that may exceed the CCME guideline of 0.03 mg/L for protection of aquatic life, and may cause a significant adverse effect on fish population in and downstream of Rose Creek. Although mitigation of these discharges is possible by relocation of the tailings, the effects of delaying such action are not insignificant or trivial. Delays will mean an increase in the risk of contamination to Rose Creek. While it is recognized that there is also a risk of delay related to the potential of a physical failure of tailings impoundment dams or diversions this will not be addressed here. This discussion deals with the risk related to the contamination of groundwater and subsequent transport into Rose Creek. The following discussion presents the results of model scenarios that are based on existing data to address several "What-if?" questions related to the release of high zinc tailings discharge to the underlying aquifer and the estimated effects on water quality in Rose Creek. The discussion attempts to highlight the main technical issues related to the migration of contaminated water from the tailings to Rose Creek via shallow groundwater and the implications of delaying the removal of the tailings from the Rose Creek Valley. The main focus of this discussion surrounds the predicted concentrations of zinc in Rose Creek for the selected "What-if?" scenarios.

OVERVIEW OF EXISTING CONDITIONS

The Down Valley tailings deposition began in the early 1970s. The Original and Secondary tailings impoundments were filled and effectively oxidation of those tailings began around 1975 and 1982 (or approximately 28 and 21 years before present), respectively. Oxidation has resulted in the production of water soluble products such as sulphate, zinc and other metals in the tailings porewater. A cross-section through the tailings along the main axis of the Rose Creek Valley illustrates

the conditions in and below the tailings, and shows arrows depicting the directions of water flow in the subsurface (Figure 1). This diagram shows that rainwater that falls on the surface of the tailings will migrate vertically downward where it contacts oxidized tailings and then proceeds to carry down contaminated water into the underlying aquifer. Once the infiltrating tailings water arrives at the aquifer, the dissolved constituents such as sulphate and zinc get carried with the groundwater below the tailings, eventually to discharge to Rose Creek, likely downstream of the Cross-Valley Dam.

A 1988 field study reported by SRK (1991) showed that the tailings porewater was acidic (low pH) and contained very elevated concentrations of sulphate and zinc, and that the solids exhibited depletion of neutralization potential that was consistent with acid generation in the tailings. The more recent field study by Gartner Lee (2002) showed that the acid front had moved downward in the tailings compared to conditions in 1988, and that the porewater in the tailings contained a substantial amount of soluble zinc. The observed profiles of zinc concentrations through the tailings at six different locations are shown in Figure 2. The measurements show that:

- there are high (peak) concentrations at different depths in the tailings;
- the trends are consistent with a downward migration of contaminated porewater (that is being driven by natural infiltration of rain and snow-melt);
- the zinc "front" has already arrived at the bottom of the tailings or the top of the natural aquifer material at one or two of the 6 locations with either borehole data or that are currently monitored; and

- the least developed oxidation zone (or shallowest and lowest zinc concentrations) occurs in the Intermediate tailings (P01-05).

The data suggest that the zinc front will also migrate toward and from the bottom of the tailings into the aquifer at other locations. Table 1 shows a summary of distances of the "fronts" for zinc at various locations and the estimated times for zinc to migrate to the bottom of the tailings. The estimated arrival times vary from a few years to several decades. There will be some uncertainty in the estimated times for zinc to arrive at the top of the aquifer because of the natural variability in the characteristics of the tailings, the amount of neutralization that is available and the overall attenuation of zinc migration in tailings. However, the available evidence suggests that the zinc front is already moving into the aquifer in some locations (those containing predominantly sandy tailings), and these may be representative of about one-third of the entire tailings. Therefore, it is likely that the zinc has arrived at the top of the aquifer over a significant area of the tailings. It is clear that zinc migration into the underlying aquifer will continue to increase into the future if the tailings remain in place. This is true even if mitigative action such as construction of covers or flooding is initiated.

MODELLING THE MIGRATION OF ZINC IN GROUNDWATER FROM THE TAILINGS TO ROSE CREEK

A one-dimensional groundwater (contaminant-transport) model was selected to calculate zinc migration from the tailings, through groundwater, to Rose Creek. Existing data were compiled and used in the model. A summary of conditions applied to the model is listed in Table 2. Although the unsaturated portions of the Intermediate tailings are also oxidized, the relative depths and volumes are small and therefore, only the Original and Secondary tailings were considered as a source of zinc and sulphate for this analysis. The travel distance for groundwater was assumed to extend from the west edge of the Secondary impoundment to the Cross-Valley Dam. The rate of infiltration through the tailings was assumed to be 125 mm/year as an average for the area. The hydraulic conductivity of the bulk aquifer was that reported by Gartner Lee (2002) for sands and gravels and was used as the average "model" value, and the average gradient or slope on the watertable (or piezometric surface) in the aquifer was also takes from Gartner Lee (2002). The flow in Rose Creek was assumed to be an average annual value (2,200 L/s). It should be noted that average winter flows are about 1/3 of the annual average flows and therefore modelled concentrations reported here could triple during this low flow period because groundwater flow rates will remain relatively constant throughout the year.

The concentrations in tailings porewater were estimated from the average soluble zinc load that was readily extracted by mixing three parts water with one part moist tailings (Gartner Lee, 2002). The extracted Zn and sulphate were then assumed to be present in the tailings porewater for an assumed water content condition in the tailings impoundment (1 litre of tailings contains an average 0.2 litres of water through the tailings). The actual water content of the tailings may vary between 0.1 near the surface to about 0.35 for fully saturated conditions near the watertable. A value of 0.2 was selected as an average water content for the entire thickness of the tailings in this modelling study.

Only the Original and Secondary impoundments were considered as a source of soluble sulphate and zinc, with averages of 10.0 and 1.7 kg/tonne, respectively. These values equate to average porewater concentrations of 95,000 and 16,150 mg/L for sulphate and zinc, respectively. The area over which infiltration occurred (Original plus Secondary tailings) was about 95 ha.

The modelling approach assumes that the porewater in the tailings has a specified concentration of zinc and sulphate that are based on field data. Natural infiltration moves the tailings porewater down into the aquifer where it becomes part of the groundwater that flows through the sands and gravels. The groundwater affected by tailings porewater will likely remain fairly shallow as indicated in previous studies (BEAK, 1999; Gartner Lee, 2002), and will eventually return to the surface in the form of groundwater discharge to Rose Creek, downstream of the Cross-Valley Dam.

Because the groundwater flow path is relatively simple and there is no question that the affected groundwater will discharge to Rose Creek, a one-dimensional contaminant transport model can provide a reasonably realistic assessment of zinc and sulphate behaviour in the aquifer below the tailings.

SENSITIVITY ANALYSIS (THE WHAT-IF QUESTIONS)

All natural systems, including groundwater pathways, have variability associated with them, as well as uncertainties that we cannot usually eliminate entirely. Because of these inherent uncertainties, we generally run groundwater models to assess a range of conditions that vary from our best estimate of existing conditions. This is referred to as a sensitivity analysis, and the results provide a basis for understanding the importance of uncertain issues, processes or values that describe or control the system. In addition, models can be used to ask What-If? questions related to planned mitigation or remediation strategies. In this case, the main issue that was addressed relates to the removal of the tailings and what implications are relevant to Rose Creek of delaying the removal of tailings from the valley. All model runs assume that year zero corresponds to the arrival of the high zinc concentrations at the top of the aquifer. This event, on average, could be occurring now or in a few years into the future, but is uncertain.

The following modelling scenarios were developed to address combinations of uncertainties as well as the issue of tailings relocation.

1. What is the effect on Rose Creek if the status quo is maintained and the average estimated conditions apply?

2. What is the effect on Rose Creek if the groundwater velocity (that controls zinc and sulphate migration in the aquifer) is five or ten times higher than estimated values based on flow balance and the tailings remain in place?

3. What is the effect of attenuation of zinc in the aquifer if the tailings remain in place?

4. What is the effect of removing the tailings various times (1, 5, 15, 25 years) after high zinc concentrations arrive at the top of the aquifer for average conditions?

5. How does an increased groundwater velocity affect Rose Creek if tailings are removed?

6. What is the effect of attenuation of zinc in the aquifer if the tailings are removed?

7. What if the concentration of zinc in tailings porewater is less than the estimated average value?

These questions are addressed in sequence and the primary conclusions from the modelling are summarized. The results of the modelling are shown as the predicted concentrations in Rose Creek as a function of time. For reference, the assumed CCME guideline for zinc in Rose Creek (and other surface waterbodies) is 0.03 mg/L. All values shown in the following graphs are in mg/L and are for zinc concentrations unless noted otherwise.

STATUS QUO CONDITIONS

The predicted concentrations of sulphate and zinc in Rose Creek with time are shown in Figure 3. This figure shows that, after reaching the top of the aquifer, the sulphate and zinc could require up to about 30 years of travel time in the groundwater to arrive at Rose Creek downstream of the Cross-Valley Dam. After the sulphate and zinc plume arrive at Rose Creek, the concentrations will increase until they become constant as the discharge of groundwater affected by tailings porewater continues for many decades or hundreds of years. The maximum predicted concentration of zinc is about 25 mg/L or almost 1,000 times greater than the CCME guideline value for the protection of aquatic life.

Conclusion 1: The status quo situation will cause zinc concentrations in Rose Creek to far exceed CCME guidelines.

UNCERTAINTIES IN GROUNDWATER VELOCITIES

An average groundwater velocity was estimated from the reported hydraulic conductivity (K) for the sand and gravel aquifer (Gartner Lee, 2002) and measured gradients, assuming a porosity of 0.4 in the aquifer. This gives a velocity of about 50 metres per year in the aquifer and therefore about 50 years is required for the front of the zinc plume in the aquifer to migrate 2,800 metres (from the middle of the Secondary and Original tailings impoundments to the Cross-Valley Dam). The hydraulic conductivity value for the sands and gravels represents a bulk value that is consistent with average groundwater flow and the water balance. However, migration of contaminants will generally follow high velocity zones or layers in the subsurface and it is common to observe zones with hydraulic conductivities and velocities that are more than ten times the "average" value. Therefore, the velocity was varied to five and ten times the average value to evaluate the effect.

The results of velocity uncertainty are shown as predicted zinc concentrations in Rose Creek in Figure 4. The average velocity results in "breakthrough" or rising zinc concentrations at about 30 years. A velocity that is five times greater than the average exhibits breakthrough after about five years (after high-zinc porewater in the tailings arrives at the top of the aquifer) and a velocity of ten times results in breakthrough to Rose Creek only about two years after leaving the tailings.

Conclusion 2: **The uncertainty in velocity only affects the estimated arrival time in Rose Creek and not the final concentrations if the tailings remain in place.**

THE EFFECT OF ZINC ATTENUATION FOR STATUS QUO CONDITIONS

Attenuation of dissolved chemicals in groundwater is said to occur if the chemical migrates at a slower velocity than the groundwater. Chemicals like sulphate generally do not experience attenuation, but many metals will be attenuated by chemical reactions with the aquifer materials that temporarily adsorb the chemicals along the groundwater flow path. The degree of attenuation is described by a distribution coefficient (or K_d). When the K_d is large, attenuation is high and if the K_d is zero, there is no attenuation. However, zinc is one of the most mobile of the heavy metals and does not generally experience significant attenuation (it has a low K_d value). Nonetheless, the effects of attenuation of zinc in the aquifer were examined.

For illustration, a K_d of one was set for zinc resulting in a migration rate for zinc that is almost a factor of 4 lower than the groundwater velocity (assuming the aquifer has a bulk density of 1,500 kg/m^3 and a porosity of 0.4). The zinc concentration in Rose Creek for a velocity that is ten times the average and a K_d of one is shown in Figure 4. Breakthrough to the creek occurred after about five years, and the maximum concentration is the same as that without attenuation. Therefore, attenuation can delay the arrival time of zinc in Rose Creek, but will not decrease the maximum concentrations of zinc if the tailings are not removed.

Conclusion 3: **Attenuation of zinc in the aquifer only affects the arrival or breakthrough time in Rose Creek and not maximum concentrations if the tailings remain in place.**

DELAY TIME TO REMOVE TAILINGS

The time to remove tailings after the high zinc porewater arrives at the top of the aquifer is an important issue. To simplify the modelling, it was assumed that the tailings will be removed instantaneously after the specified time periods. In reality, several years will be required to relocate the tailings, but that will not substantially alter the conclusions from the model results.

The zinc concentrations in Rose Creek for average conditions with delay times of 1, 5, 15 and 25 years are shown in Figure 5. In this case, because the tailings are removed and therefore the source of zinc is removed after the specified times, the concentration s in Rose Creek begin to decrease after clean water replaces the tailings porewater containing zinc. The pulse or peak zinc concentrations in Rose Creek result from the zinc that has already entered the aquifer and that is in the groundwater before the tailings are removed. The results show that peak zinc concentrations in Rose Creek vary between about 1 mg/L if the delay is only one year, to as high as about 16 mg/L if tailings relocation is delayed 25 years. These

should be compared to a maximum of 25 mg/L predicted to occur if tailings are not relocated.

Conclusion 4: **Removal of tailings will lessen the impact on Rose Creek, and less delay equates to lower concentrations. However , a delay of one year may cause a large exceedance of the CCME guideline (0.03 mg/L).**

EFFECT OF GROUNDWATER VELOCITY IF TAILINGS ARE RELOCATED

If the tailings are not relocated, the uncertainty in groundwater velocity only affects the estimated arrival time of zinc in Rose Creek. Figure 6 shows the effect of increased velocity by five and ten times the average value if the tailings are relocated 15 years after zinc breaks through from the tailings to the aquifer. The peak zinc concentrations in Rose Creek for the higher velocities are almost the same as the maximum values when the tailings remain in place.

Conclusion 5: **Increased groundwater velocities not only decrease the arrival time of zinc in Rose Creek but also increase the observed concentrations when tailings are relocated.**

EFFECT OF DELAYED REMOVAL FOR HIGHER GROUNDWATER VELOCITIES

The zinc concentrations in Rose Creek are shown as a function of delayed removal in Figure 7 when groundwater velocities are ten times greater than average. The high velocity results in shorter arrival times but also in increased concentrations compared to those for a lower groundwater velocity.

Conclusion 6: **Even short delays in relocating the tailings after breakthrough of zinc to the aquifer can result in very significant impacts on Rose Creek if groundwater velocities are higher than expected.**

EFFECT OF ZINC ATTENUATION IF TAILINGS ARE RELOCATED

Zinc attenuation in the aquifer results only in later arrival times in Rose Creek if the tailings remain in place. As shown in Figure 8, attenuation also reduces concentrations in Rose Creek if tailings are relocated. In this example, the delay to remove tailings was five years and the groundwater velocity is ten times greater than average. The attenuation ranges from $K_d = 0$ (none) to $K_d = 5$ (a factor of almost 20 slower than groundwater movement). The calculations show that attenuation may reduce peak concentrations in Rose Creek substantially compared to conditions with no attenuation. However, attenuation is very uncertain and no measurements are yet available to substantiate the probable K_d value for the elevated concentrations of zinc that are expected in the aquifer below the tailings (greater than 100 mg/L).

Conclusion 7: **Attenuation of zinc in the aquifer can result in lower concentrations in Rose Creek, but the peak levels are expected to significantly exceed the CCME guideline after some period of time even with significant attenuation.**

UNCERTAINTY IN ZINC CONCENTRATION IN TAILINGS POREWATER

The average concentration of zinc in tailings porewater was estimated from the water leach (or shake-flask) test results on tailings (Gartner Lee, 2002). It is possible that actual porewater concentrations could be somewhat lower as a result of solubility controls at very high concentrations. However, the lowest concentrations resulting from solubility controls would not be lower than those observed in the water extracted from the leach tests or about 3000 mg/L. In other words, there are no likely solubility controls on zinc up to concentrations of at least 3000 mg/L.. Therefore, a similar value was applied in the modelling to determine the effects on Rose Creek. The calculated zinc concentrations in Rose Creek for tailings porewater that is approximately 25% of the average value (or 3800 mg/L) are shown in Figure 9 for different tailings removal delay times. Although the maximum zinc concentrations are lower than those predicted for average porewater concentrations in the tailings, the peak values remain above 1 mg/L and far above the CCME guideline for zinc.

Conclusion 8: **Lower zinc concentrations in tailings porewater can reduce the effects in Rose Creek but not likely enough to meet CCME guidelines.**

SUMMARY OF CONCLUSIONS

The groundwater transport modeling results clearly show that the status quo conditions for Down Valley tailings at Faro will result in unacceptable zinc concentrations in Rose Creek in the future. It is very unlikely that covers or flooding of the tailings will alleviate this situation. Should contamination from tailings porewater begin to enter the aquifer at the high concentrations found in the tailings, one of the only means to prevent contamination of Rose Creek will be to collect and treat contaminated groundwater, probably for hundreds of years.

If the tailings are relocated, the potential impacts to Rose Creek will be less than those if the tailings remain in place. However, it is important to prevent the migration of significant quantities of tailings porewater (containing high zinc levels) into the underlying aquifer. Therefore, it is critical that the relocation of the tailings not be delayed. The model results showed that even short delays of a few years after zinc breakthrough to the aquifer (from the tailings) could result in unacceptable contamination of Rose Creek. If significant amounts of dissolved zinc enter the groundwater in the aquifer, groundwater would need to be collected and treated for several decades even after the tailings were removed. Current monitoring suggested that zinc may not yet have entered the aquifer in significant quantities, but estimates suggest that this situation may change for the worse in the very near future. Relocation of the tailings should be a priority if Rose Creek is to be protected, and perpetual collect and treat operations are to be avoided.

REFERENCES

BEAK (Nicholson and Tibble). 1999. Faro Mine–Down Valley Tailings Contaminant Transport Assessment and Evaluation of the Existing Monitoring Network for Groundwater.

SRK. 1991. Down Valley Tailings Impoundment Decommissioning Plan, Faro, Yukon Report 60635 to Curragh Resources Inc.

Gartner Lee. 2002. Hydrogeological and Geochemical Investigation, Faro Mine, Yukon. Report to Deloitte & Touche (Draft).

Nicholson, R.V. and J.M. Scharer. 1993. Critical Evaluation of Acid Mine Drainage Modelling 1986-1991 for Curragh, Down Valley Tailings, Faro, Yukon. Report to Environment Canada.

Nicholson, R.V., J.M. Scharer and C.M. Kwong. 1995. Faro Mine-Down Valley Tailings Acid Mine Drainage Modelling. Report to Environment Canada, Yukon.

Nicholson, R.V., J.M. Scharer and C.M. Kwong. 1996. Faro Mine-Down Valley Tailings: Acid Mine Drainage Modelling with a Focus on Zinc Loadings for Selected Management Options. Report to Environment Canada, Yukon.

Robertson Geo Consultants. 1996. Anvil Range Mining Complex – Integrated Comprehensive Abandonment Plant, Vol. 1-3, App A-T.

TABLE 1: SUMMARY OF DISTANCES AND ESTIMATED ARRIVAL TIMES OF THE ZINC FRONT IN THE TAILINGS ABOVE THE AQUIFER

Borehole or Well Location	Tailings Thickness (m)	Peak Zn in Tailings (mg/L)[1]	Distance of Leading Edge of Zinc Porewater Above Aquifer (m)	Estimated Time for Zn to Arrive at Top of Aquifer Since 2001 (years)[2]
P01-05	15	10,000	5	8-84
P01-07	26	13,100	1.5	2-25
P01-08	23.5	5,800	8	13-134
P01-09	14	42,000	0[3]	0
P01-10	18.5	32,300	4	6-67
A7-1	11	17,400	<1	2-17

[1] Concentration of zinc in tailings porewater converted from 3:1 leach data (Gartner Lee, 2001) assuming a tailings bulk density of 1.9 and a saturated porosity of 0.4. If an average water content of 0.2 was assumed, then concentrations would be two times larger than those listed.

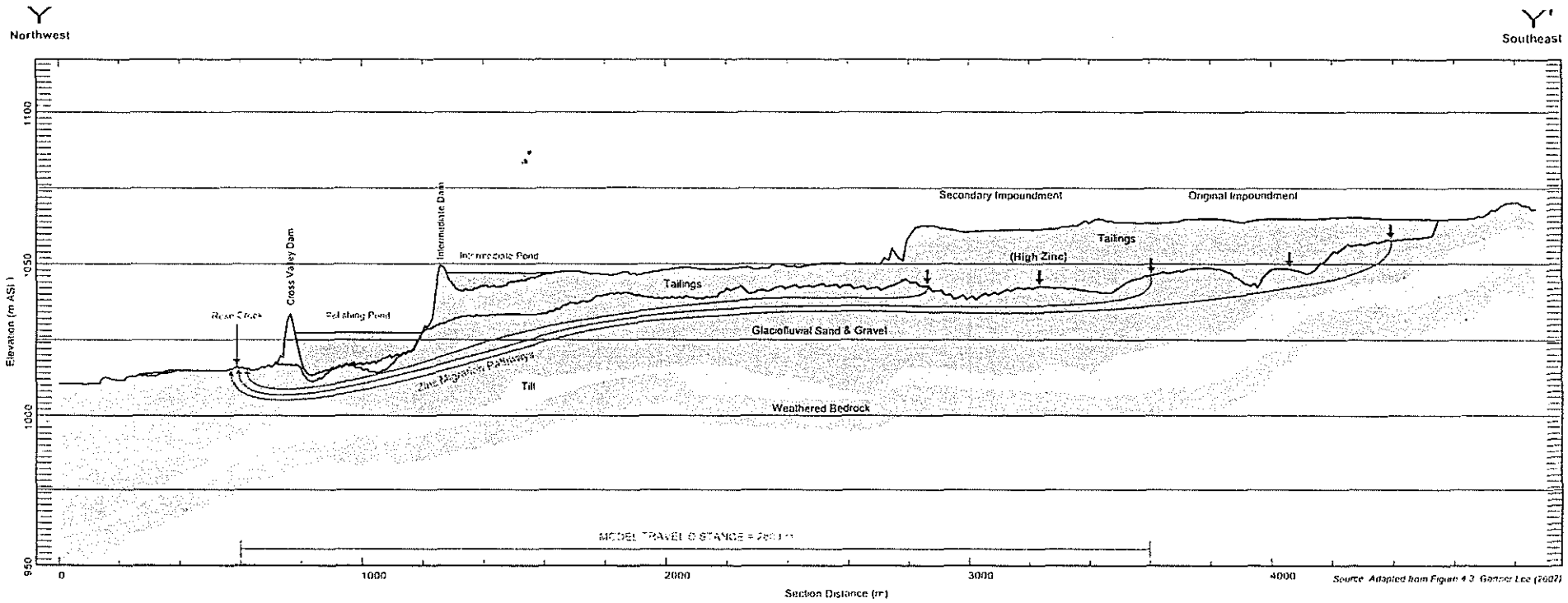
[2] Range of times calculated for no attenuation in tailings (smallest time) to attenuation factor of 7 (largest time). All times assume an infiltration rate of 0.125 m/a and a volumetric moisture content of 0.2.

[3] Zinc has entered aquifer at P01-09. The tailings type and depth is typical of about 30% of the tailings area.

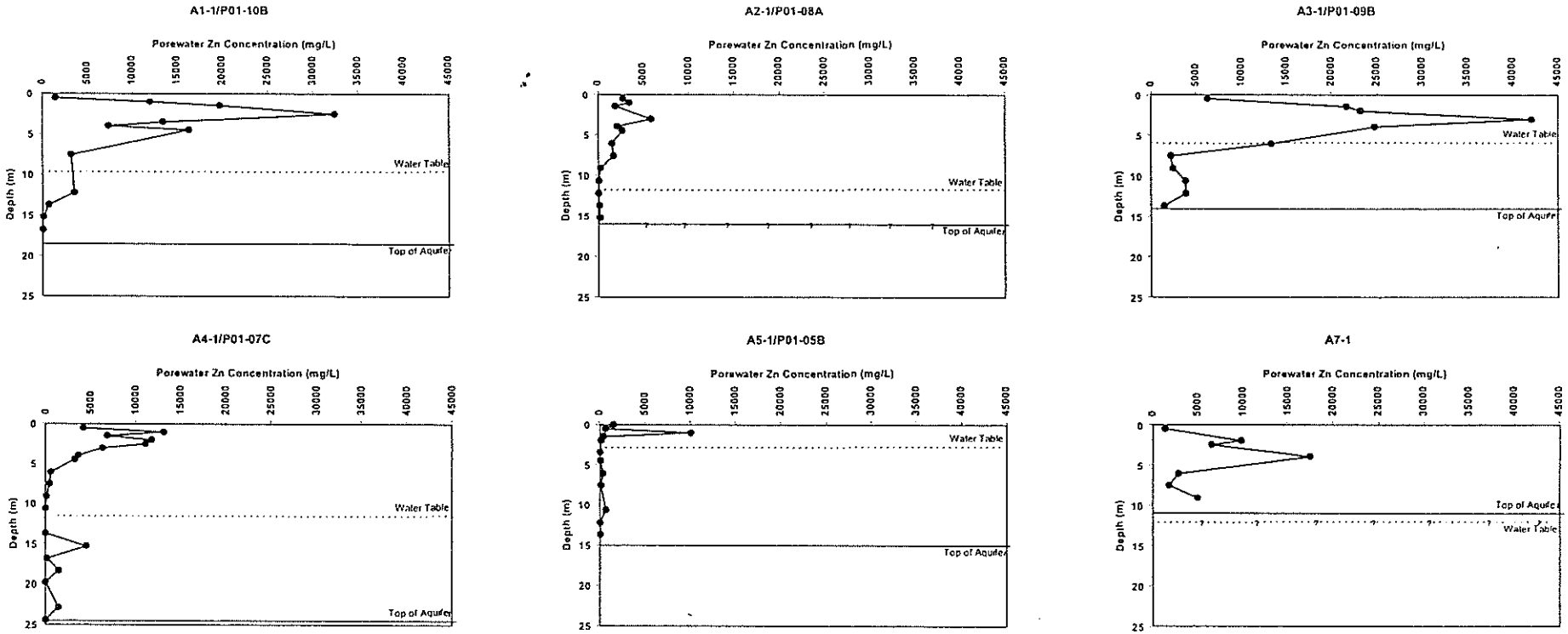
TABLE 2: SUMMARY OF AVERAGE REPRESENTATIVE CONDITIONS AND OTHER VALUES USED FOR THE GROUNDWATER (TRANSPORT) MODELLING OF ZINC MIGRATION FROM THE TAILINGS TO ROSE CREEK

Characteristic	Units	Average Value	Other Values Considered for What-If? Questions
Area[1]	m^2	951,400	None
Infiltration through Tailings	mm/year	125	None
Zinc Concentration in Tailings Porewater	mg/L	16,150	3,800
Hydraulic Conductivity of Aquifer	m/s	$1x10^{-4}$	None
Average Gradient	-	0.0061	None
Porosity	-	0.4	None
Average Groundwater Velocity in Aquifer	m/s	$1.5x10^{-6}$	$7.5x10^{-6}$, $1.5x10^{-5}$
Travel Distance[2]	m	2,800	None
Flow in Rose Creek[3]	L/s	2,200	None
K_d (for Zinc in Aquifer)	L/kg	0	0.1, 0.5, 1, 5
Tailings Removed After Zinc Breakthrough to Aquifer	years	Not moved	1, 5, 15, 25

[1] Area of Original and Secondary tailings impoundments only.
[2] Distance from the approximate mid-point of the Original and Secondary tailings impoundments to the downstream side of the Cross-Valley Dam (see Figure 1).
[3] Average annual flow in Rose Creek.



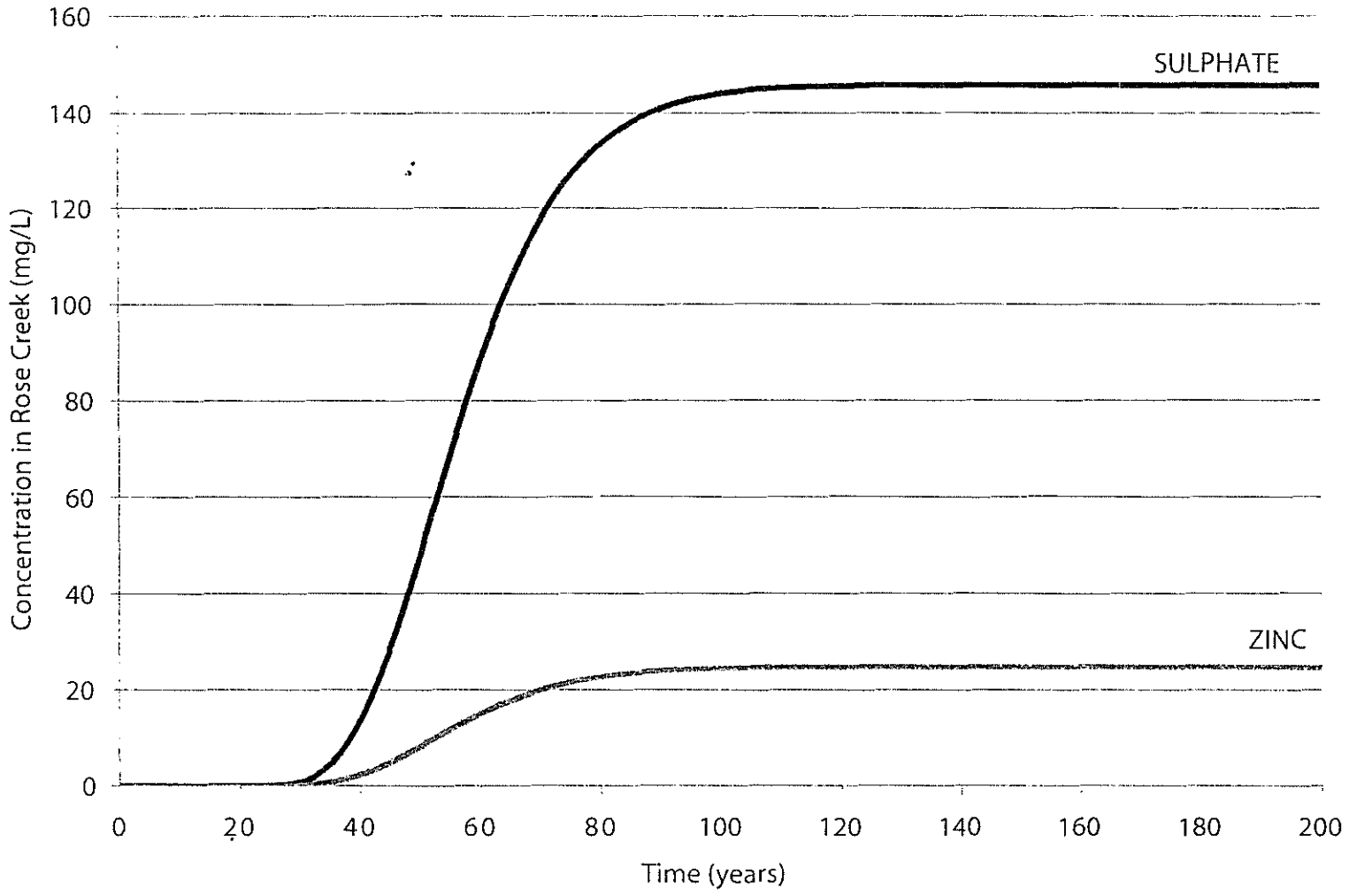
Environment Canada		
Schematic Cross-Section Showing Groundwater Pathways for Zinc from the Original and Secondary Tailings		
Stantec	Project No 631 22746	Figure 1



Environment Canada

Zinc concentrations with depth in tailings pore water, assuming porosity = 0.4 and 100% saturation.
Dashed horizontal lines represent the approximate water table. Solid horizontal lines represent the top of the aquifer.

Stantec	Project No. 631 22746	September 2003	Figure 2



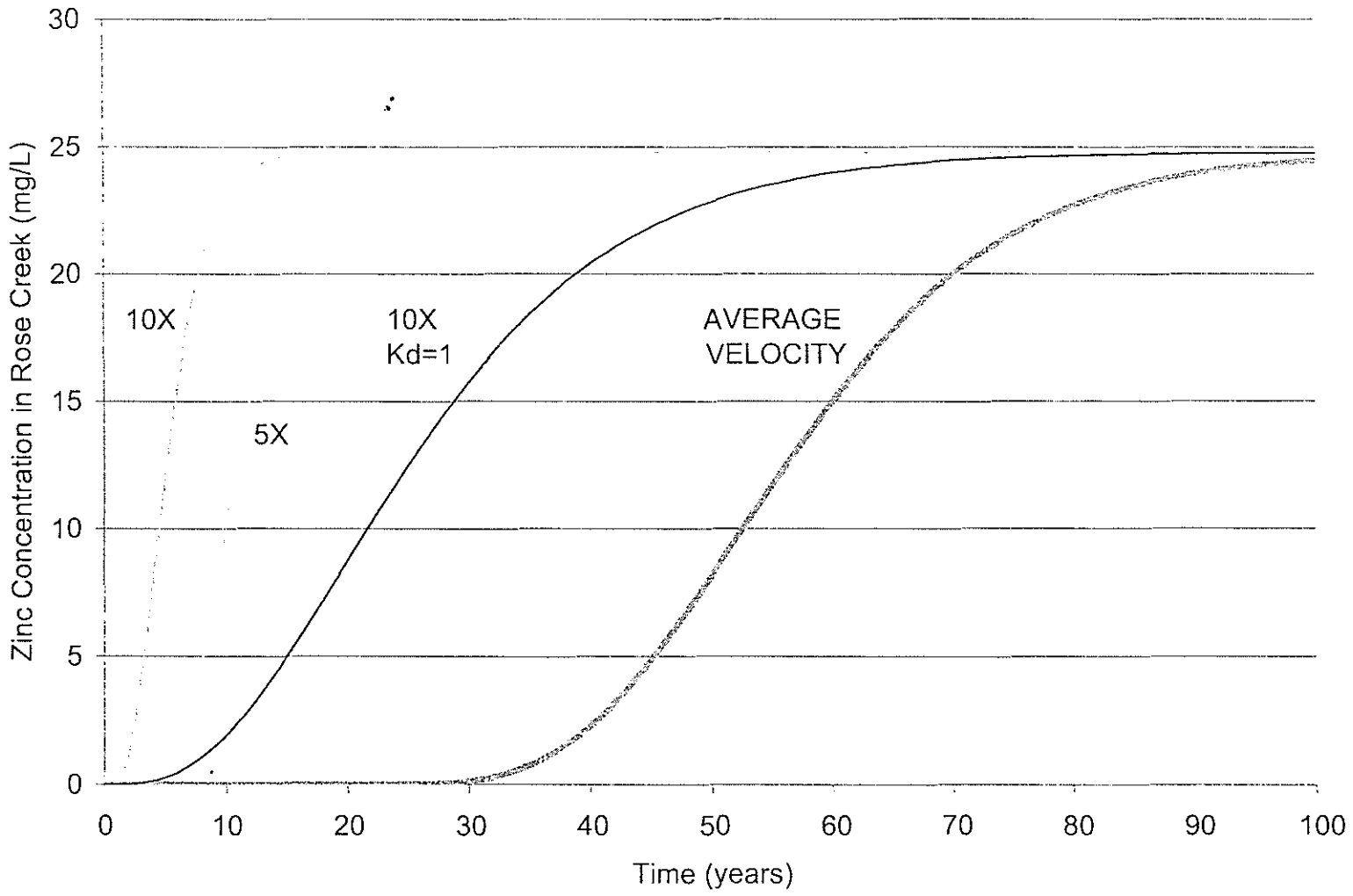
Environment Canada

Predicted concentrations of sulphate and zinc in Rose Creek for average conditions if the tailings remain in place

Stantec

Project No. 631 22746

Figure 3



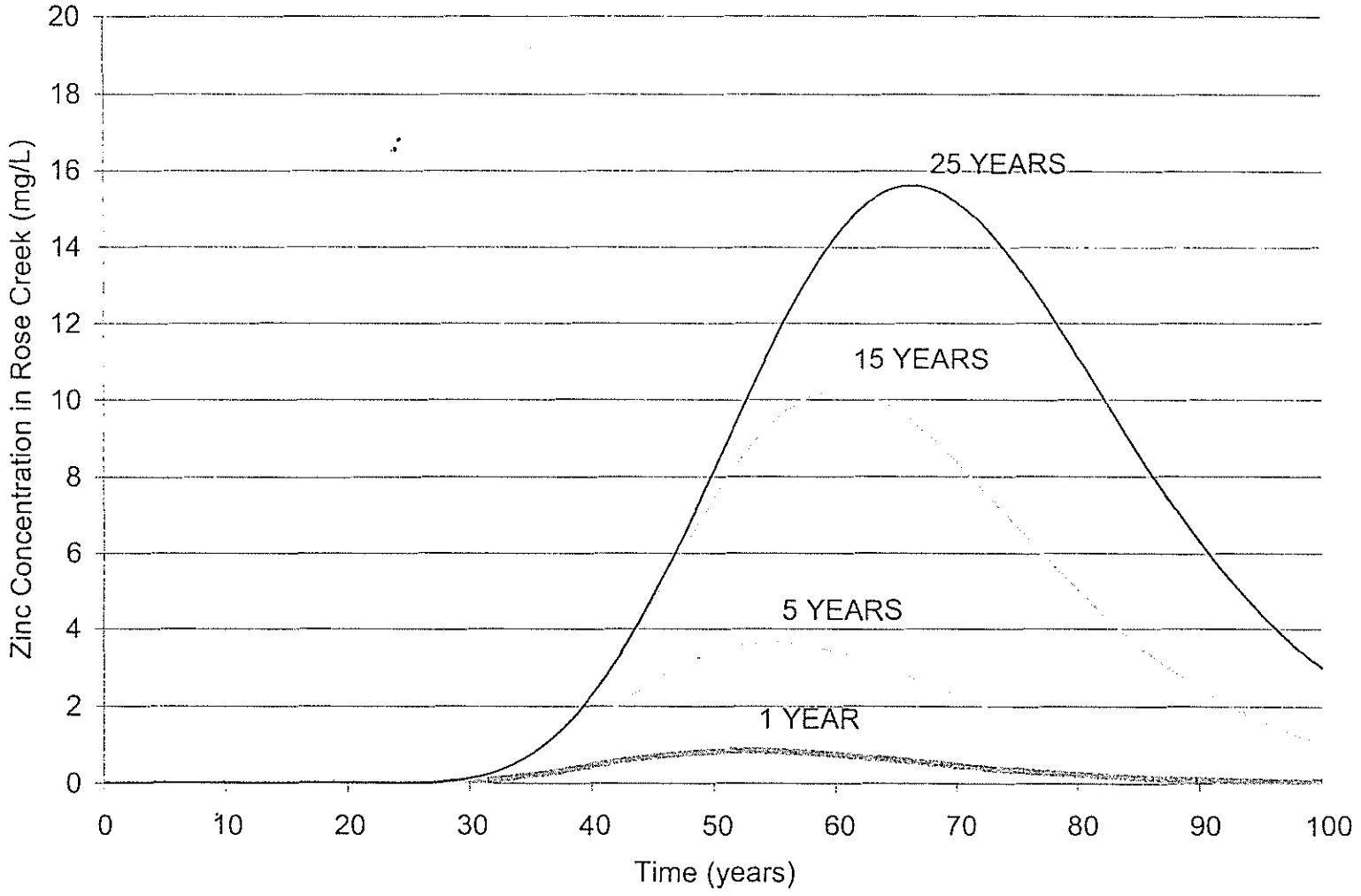
Environment Canada

Predicted zinc concentrations in Rose Creek for different groundwater velocities and attenuation in the aquifer if the tailings remain in place

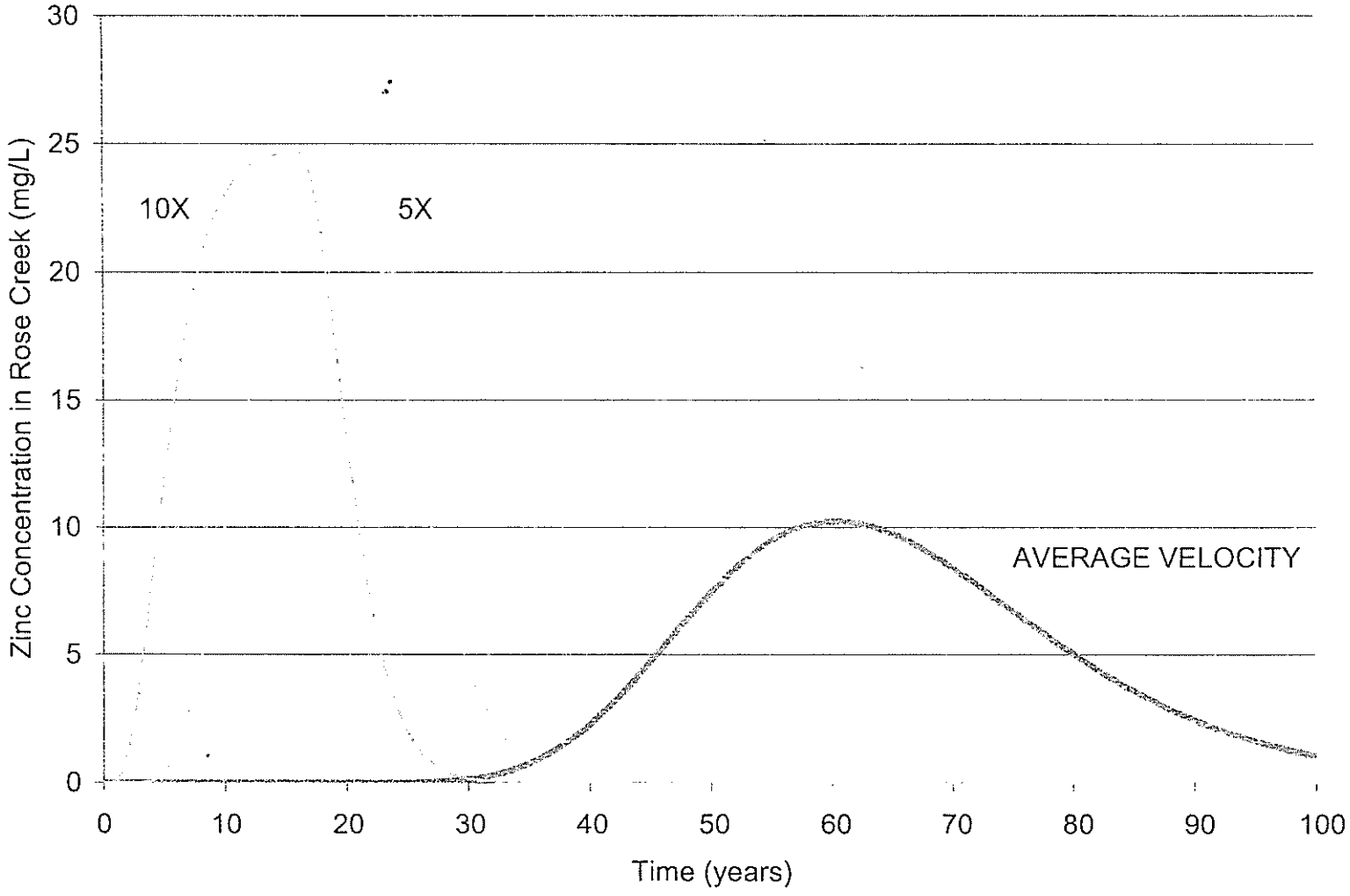
Stantec

Project No.
631 22746

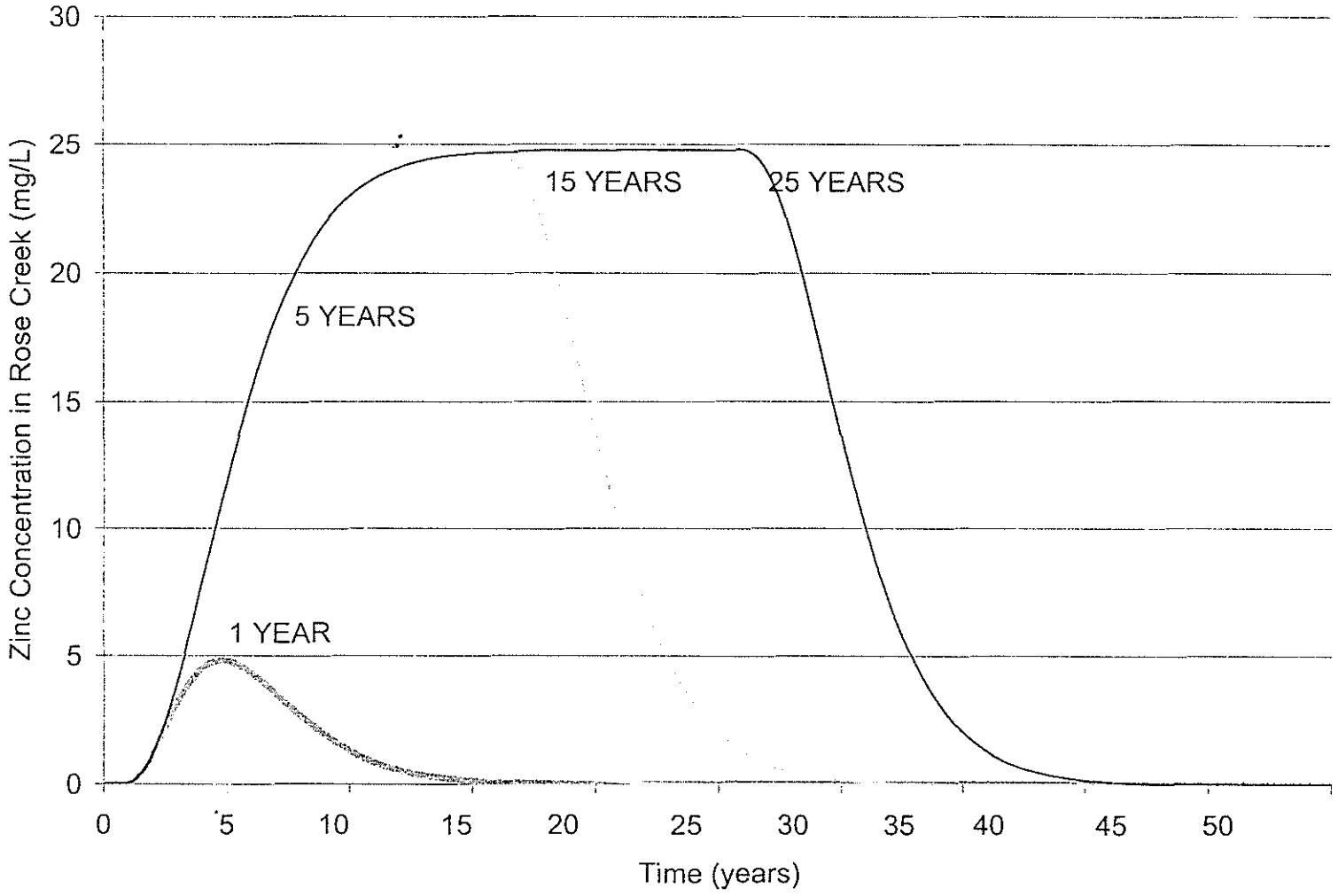
Figure 4



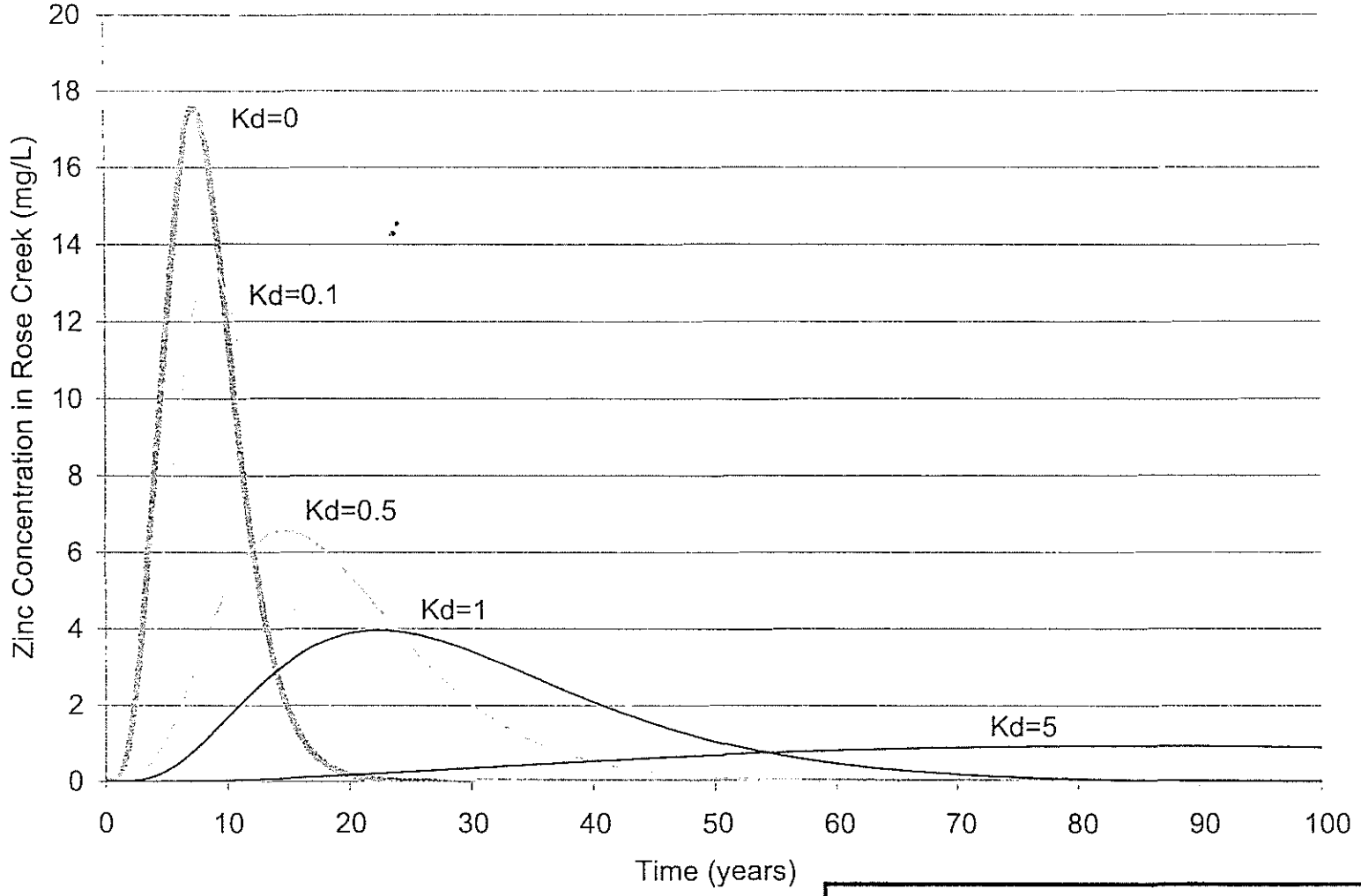
Environment Canada		
Zinc concentrations in Rose Creek for selected delay periods between tailings porewater entry to the aquifer and tailings relocation		
Stantec	Project No. 631 22746	Figure 5



Environment Canada		
Zinc concentrations in Rose Creek with different groundwater velocities after 15 years of delayed tailings removal		
Stantec	Project No. 631 22746	Figure 6



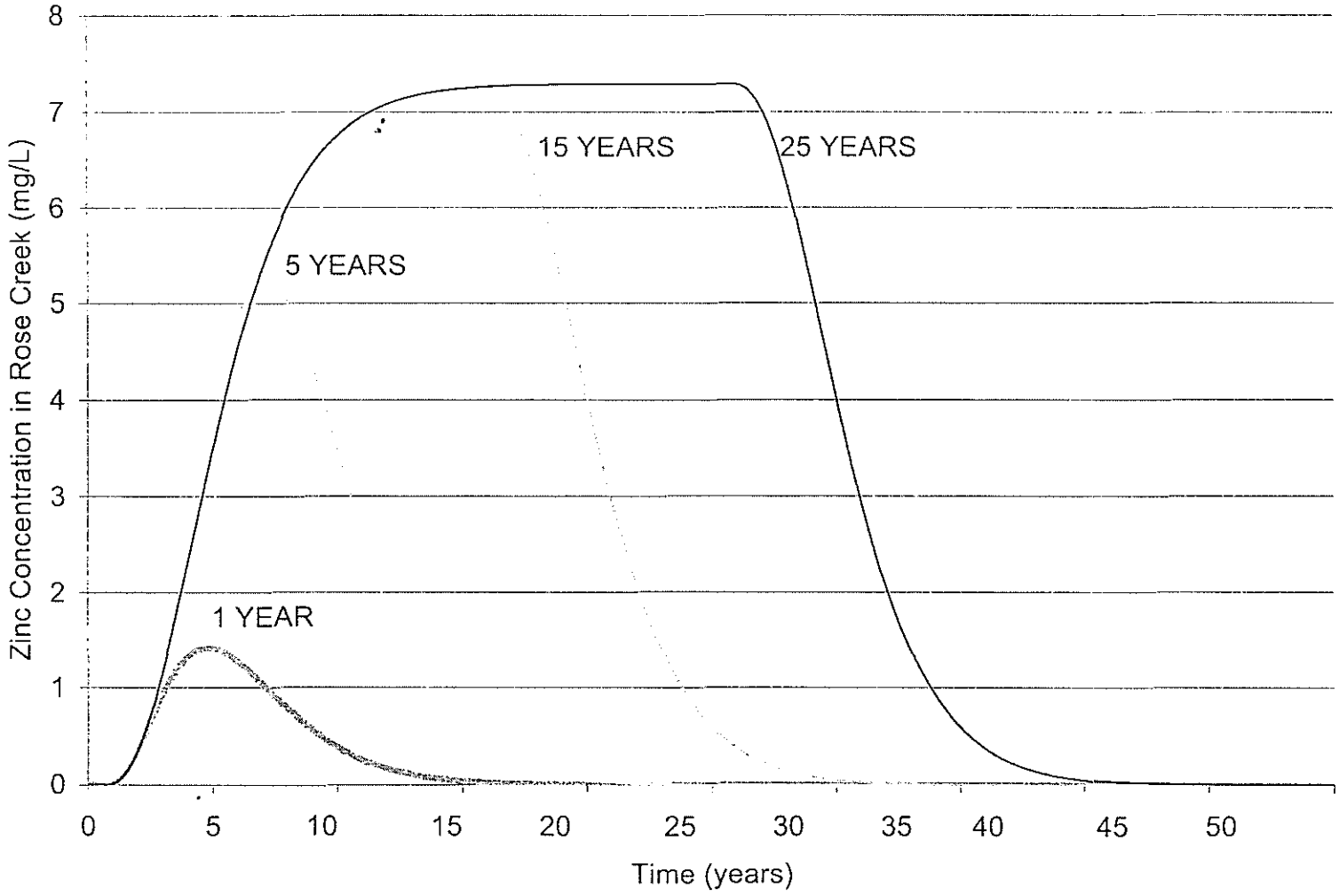
Environment Canada		
Zinc concentrations in Rose Creek for different delays in relocation of tailings and ten times the average groundwater velocity		
Stantec	Project No. 631 22746	Figure 7



Environment Canada

Zinc concentrations in Rose Creek as a result of different Kd values in the aquifer for a five-year delay in tailings relocation and ten times the average groundwater velocity

Stantec	Project No. 631 22746	Figure 8



Environment Canada		
Zinc concentrations in Rose Creek for a zinc concentration in tailings porewater that is 25% of the average value		
Stantec	Project No. 631 22746	Figure 9

Ronald V. Nicholson, Ph.D.

SENIOR SCIENTIST

Distance Education Courses Produced and Offered at the University of Waterloo

Earth 459 – Chemical Hydrogeology: This is a fourth-year course with an equivalent to 12 weeks of lectures at 3 hours per week. There are six assignments due every 2 weeks and a final exam is completed at the end of the course.

Earth 458 – Physical Hydrogeology: This is a fourth-year course with an equivalent to 12 weeks of lectures at 3 hours per week. There are six assignments due every 2 weeks and a final exam is completed at the end of the course.

Earth 223 –Hydrology: This is a second-year course with an equivalent to 12 weeks of lectures at 3 hours per week. There are six assignments due every 2 weeks and a final exam is completed at the end of the course.

Earth 221 – Geochemistry: This is a second-year course with an equivalent to 12 weeks of lectures at 3 hours per week. There are six assignments due every 2 weeks and a final exam is completed at the end of the course.

SCI 250 – Environmental Geology: This is a second-year course for non-majors with an equivalent to 12 weeks of lectures at 3 hours per week. There are six assignments due every 2 weeks and a final exam is completed at the end of the course.

Ronald V. Nicholson, Ph.D.

SENIOR SCIENTIST

Nicholson, R.V., Scharer J.M., Kwong E.C.M. and Janzen, M.P., 1998. Laboratory Studies of Pyrrhotite Oxidation. MEND Report 1.21.2, NRCan, Ottawa, Canada

Nicholson R.V., Lush, D.L., and G. Williams. 1997. Waste Rock Investigation for the Voisey Bay Mine/Mill Project. BEAK Report Submitted to Voisey's Bay Nickel Company.

Nicholson, R.V., Scharer, J.M. and Anderson, M.E., 1997. A Rapid Kinetic Technique for Measuring the Reactivity of Sulphide Waste Rock: The Oxygen Consumption Method. MEND Report 4.6.5B, NRCan, Ottawa, Canada

Nicholson, R.V., and Tibble, P.A., 1997. A Survey of In Situ Oxygen Consumption Rates on Sulphide Tailings: Investigations on Exposed and Covered Tailings. MEND Report 4.6.5A, NRCan, Ottawa, Canada

SHORT COURSES GIVEN

Reaction Rates in Sulphide Mine Wastes, In Understanding Waste Rock Facilities in Wet and Dry Climates, 5th ICARD, May 20-21, 2000, Denver, Colorado.

Geochemistry of Toxic Chemicals in Soil and Groundwater (with J.F. Barker and R.M. Allen-King), Tacoma, Washington, May 26-27, 1993.

Current Techniques in Physical and Chemical Hydrogeology: A Focus on Contamination in the Shallow Environment. One day (with D. Rudolph) Ballarat University College, Ballarat, Australia, January 18, 1992

Hydrogeological and Geochemical Processes at Mine Sites (Hydrogeology for the Uninitiated). Second International Conference on the Abatement of Acidic Mine Drainage, Montréal, Québec, Canada, September 14, 1991,

The How and Why of Sampling Groundwater (Inorganic Geochemistry Section). Waterloo Centre for Groundwater Research, University of Waterloo, Waterloo, Ontario, Canada, June 11-13, 1990, 1991, 1992.

Ronald V. Nicholson, Ph.D.

SENIOR SCIENTIST

*Nicholson, R.V. 1992. Where do hydrogeologists come from? A North American perspective on the education of groundwater scientists and engineers (keynote speaker). Australian Geological Convention, January 18-25, Ballarat, Victoria, Australia.

*Nicholson, R.V., J.M. Scharer and W.J. Snodgrass. 1991. Coupled processes to extrapolate the kinetics of pyrite oxidation from the laboratory to mine tailings in the field. Geological Society of America Meeting, San Diego, California, October 21-24.

*Nicholson, R.V. and W.J. Snodgrass. 1989. Acidification of sulphide tailings - The use of mechanistic models to ask the correct questions. GAC Annual Meeting, Montréal, May.

*Nicholson, R.V., J. Scharer, B. Halbert, W.J. Snodgrass and J.D. Phyper. 1989. Reactive acid tailings assessment program (RATAP): The concepts and application. GAC Annual Meeting, Montréal, May.

Nicholson, R.V. and *W.J. Snodgrass. 1988. From ore to tailings - Geochemical stability and implication for waste management. Presented at International Symposium on Uranium and Electricity. The Complete Nuclear Fuel Cycle. September 18-21, Saskatoon, Canada (review paper).

NON-REFEREED CONTRIBUTIONS

Nicholson, R.V. 1993. Controls on water quality associated with sulphide mine wastes. Int. Conf. on Geoscience in Urban Development, August 11-15, Beijing, China.

Nicholson, R.V. 1992. A review of models to predict acid generation rates in sulphide waste rock at mine sites. Proc., International Workshop on Waste Rock Modelling, Mine Environment Neutral Drainage (MEND) Program, Toronto, September 29-October 1.

Recent Reports

Nicholson R.V. and Tibble, P.A., 2000. Application of the oxygen consumption method to tailings at Freeport Indonesia: Technology trasfer and preliminary investigations, Report to PTFI, Indonesia.

Nicholson, R.V., , P.A. Tibble and M.J. Rinker. 2000. Preliminary geochemical investigation of the Raglan tailings, September, 1999, Report to SMRQ, Falconbridge Limited, Rouyan-Noranda, Quebec.

Nicholson R.V., Lush, D.L., and G. Williams. 1999. Extended testing of selected columns and humidity cells with mine rock from the Ovoid deposit, Voisey's Bay Mine-Mill Project, Report to Voisey's Bay Nickel Company, St. John's, Newfoundland.

Nicholson, R.V., M.J. Rinker, and G. Williams. 1998. An Assessment of Shallow Pore Water Flushing at the Kidd Creek Thickened Tailings Impoundment. BEAK Report Submitted to Falconbridge, Kidd Creek.

Nicholson, R.V., and M.J. Rinker. 1998. A Modelling Assessment of Closure Options at the Kidd Creek Thickened Tailings Impoundment. BEAK Report Submitted to Falconbridge, Kidd Creek.

Nicholson, R.V., and P.A. Tibble. 1998. An Oxygen Consumption Survey of Seasonal Facility, Timmins, Ontario. BEAK Report Submitted to Falconbridge, Kidd Creek.

Nicholson, R.V., Gillham, R.W., Cherry, J.A. and Reardon, E.J., 1990. Reduction of acid generation in mine tailings through the use of moisture retaining cover layers as oxygen barriers. Reply: Can. Geotech. J., 27:402-403.

Nicholson, R.V., R.W. Gillham and E.J. Reardon. 1989. Pyrite oxidation in carbonate-buffered solution: 2. Rate control by oxide coatings. Reply: Geochim. Cosmochim. Acta, 54:395-402.

Nicholson, R.V., R.W. Gillham, J.A. Cherry and E.J. Reardon. 1989. Reduction of acid generation in mine tailings through the use of moisture retaining cover layers as oxygen barriers. Can. Geotech. J., 26(1):1-8.

Nicholson, R.V., R.W. Gillham and E.J. Reardon. 1988. Pyrite oxidation in carbonate-buffered solution: 1. Experimental Kinetics. Geochim. Cosmochim. Acta, 52:1077-1085.

Nicholson, R.V., J.A. Cherry and E.J. Reardon. 1983. Migration of contaminants in groundwater at a landfill: A Case Study, 6. Hydrogeochemistry, J. Hydrol. (63:131-176.

Cherry, J.A., Shaikh, A.U., Tallman, D.E. and Nicholson, R.V. 1979. Arsenic species as an indicator of REDOX conditions in groundwater, J. Hydrol., 43: 373-392.

Chapters in Books

Nicholson, R.V., 1994. Iron sulphide oxidation mechanisms: Laboratory studies. In MAC Short Course on Environmental Geochemistry of Sulphide Mine Wastes, Waterloo (Jambor, J.L. and Blowes, D.W., eds.), May 14-15, Vol. 22.

Nicholson, R.V. and D.J.A. Smyth. 1993. Desk-top review. In Subsurface Assessment of Contaminated Sites, Canadian Council of Ministers of the Environment, Winnipeg, Manitoba.

Snodgrass, W.J., R.V. Nicholson and N.C. Garisto. 1987. Development of an algorithm for the biogeochemical evolution of uranium mill tailings. In Tsang (ed.) Coupled Processes Associated with Nuclear Waste Repositories, Academic Press Inc., Toronto, pp. 339-353.

CONFERENCE ABSTRACTS (speaker indicated by *)

Nicholson, R.V. 2000. Release and Mobility of Nickel from Mine Waste: Theory and Case Histories, 7'th Annual BC Metal Leaching / ARD Workshop, November 29-30, 2000, Vancouver

Scharer, J.M., W.K. Annable and R.V. Nicholson. 1994. A tailings basin model to evaluation transient water quality of acid mine drainage. Third International Conference on Abatement of Acidic Drainage, Pittsburgh, Pennsylvania, April 25-29.

Nicholson, R.V. 1993. New approaches to assessing rates of acid generation in sulphide tailings. Second Annual BC Acid Rock Drainage Symposium, November 16-17, Vancouver.

*Nicholson, R.V. and J.M. Scharer. 1992. Laboratory studies of pyrrhotite oxidation kinetics. ACS Symposium on Environmental Geochemistry of Sulphide Oxidation, Washington, D.C., August 23-28.

Ronald V. Nicholson, Ph.D.

SENIOR SCIENTIST

Nicholson, R.V., Scharer, J.M., Elberling, B. and Kwong, E.C.M., 1995. Selected modelling approaches to assess sulphide mineral oxidation in mine wastes. In: CAMI'95: 3rd Canadian Conference on Computer Applications in the Mineral Industry, Montreal, Quebec, Canada, October 22-25, p. 834-843.

Nicholson, R.V., Elberling, B. and Williams, G., 1995. A new oxygen consumption technique to provide rapid assessment of tailings reactivity in the field and the laboratory. Proc., Sudbury '95 Conference on Mining and the Environment, Sudbury, Ontario, May 28-June 1.

Nicholson, R.V., Scharer, J.M., Kwong, E., Annable, W. and Williams, G., 1995. An application of the WATAIL model to develop a management strategy for a pyrrhotite tailings impoundment. Proc., Sudbury '95 Conference on Mining and the Environment, Sudbury, Ontario, May 28-June 1.

Scharer, J.M., Kwong, E., Nicholson, R.V., Petit, C.M. and Chambers, D.W., 1995. Factors affecting ARD production: Kinetics of sulphide oxidation. Proc., Sudbury '95 Conference on Mining and the Environment, Sudbury, Ontario, May 28-June 1.

Elberling, B., Nicholson, R.V., Reardon, E.J. and Tibble, P., 1994. Evaluation of sulphide oxidation rates - A laboratory study comparing oxygen flux and rates of oxidation product release. Can. Geotech. J., 31:375-383.

Elberling, B., Nicholson, R.V. and Scharer, J.M., 1994. A combined kinetic and diffusion model for pyrite oxidation in tailings: A change in controls with time. J. Hydrol., 157:47-60.

Paige, C.R., Snodgrass, W.J., Nicholson, R.V. and Scharer, J.M., 1994. Release of arsenic from model waste-water treatment solids: A mechanism based on surface ligand exchanges. Water Poll. Res. J. Can., 29(4):507-530.

Elberling, B., Nicholson, R.V. and David, D.J., 1993. Field evaluation of sulphide oxidation rates. Nordic Hydrology, 24:323-338.

Nicholson, R.V. and Scharer, J.M., 1993. Laboratory studies of pyrrhotite oxidation. Environmental Geochemistry of Sulphide Oxidation, Alpers, C.N. and Blowes, D.W. (eds.), ACS Symposium Series 550, 14-30.

Scharer, J.M., Nicholson, R.V., Halbert, B. and Snodgrass, W.J., 1993. A computer program to assess acid generation in pyritic tailings. Environmental Geochemistry of Sulphide Oxidation, Alpers, C.N. and Blowes, D.W. (eds.), ACS Symposium Series 550, 132-152.

Akindunni, F.F., Gillham, R.W. and Nicholson, R.V., 1991. Numerical simulations to investigate moisture retention characteristics in the design of oxygen-limiting covers for reactive mine tailings. Can. Geotech. J., 28:446-451.

Nicholson, R.V., Akindunni, F.F., Sydor, R.C. and Gillham, R.W., 1991. Saturated tailings covers above the water table: The physics and criteria for design. Proceedings, Second International Conference on the Abatement of Acid Mine Drainage, September 16-18, Montreal, Quebec, Vol. 1:443-460 (invited).

Ronald V. Nicholson, Ph.D.

SENIOR SCIENTIST

Logan, W.S. and Nicholson, R.V., 1998. Origin of Dissolved Groundwater Sulphate in Coastal Plain Sediments of the Rio de la Plata, Eastern Argentina. Aquatic Geochemistry 3: 305-328.

Benzaazoua, M., Bussiere, B., Nicholson, R.V. and Bernier, L., 1998. Geochemical behaviour of a multi-layered cover composed of desulphurized mine tailings. IN Tailings and Mine Waste '98, Balkema, Rotterdam, p. 389-398.

Bussiere, B., Nicholson, R.V. and Aubertin, M., 1997. Evaluation of the effectiveness of covers built with desulphurized tailings for preventing acid mine drainage. 50th Canadian Geotechnical Conference, October 20-22, 1997, Ottawa.

Bussiere, B., Nicholson, R.V., Aubertin, M. and Servant, S., 1997. Effectiveness of covers built with desulphurized tailings: Column test investigation. 4th International Conference on Acid Rock Drainage, Vancouver, May 30-June 6, pp. 763-778.

Janzen, M.P., Nicholson, R.V. and Scharer, J.M. The role of enhanced particle surface area, crystal structure and trace metal content on pyrrhotite oxidation rates in tailings. 4th International Conference on Acid Rock Drainage, Vancouver, May 30-June 6, pp. 399-415.

Orava, D.A., Tremblay, G.A., Tibble, P.A. and Nicholson, R.V., 1997. Prevention of acid rock drainage through the application of in-pit disposal and elevated water table concepts. 4th International Conference on Acid Rock Drainage, Vancouver, May 30-June 6, pp. 971-981

Paige, C.R., Snodgrass, W.J., Nicholson, R.V. and Scharer, J.M., 1997. An arsenate effect of ferrihydrite dissolution kinetics under acidic oxic conditions. Water Res. 31(9): 2370-2382.

Paige, C.R., Snodgrass, W.J., Nicholson, R.V., Scharer, J.M. and He, Q.H., 1997. The effect of phosphate on the transformation of ferrihydrite into crystalline products in alkaline media. Water Air and Soil Pollution, 97: 397-412

Tibble, P.A. and Nicholson, R.V., 1997. Oxygen consumption on sulphide tailings and tailings covers: Measured rates and applications. 4th International Conference on Acid Rock Drainage, Vancouver, May 30-June 6, pp.647-661.

Elberling, B. and Nicholson, R.V., 1996. Field determination of sulphide-oxidation rates in mine tailings. Water Resources Research, 32:1773-1784.

Paige, C.R., Snodgrass, W.J., Nicholson, R.V. and Scharer, J.M., 1996. The crystalization of arsenate contaminated iron hydroxide solids at high pH. Water Environ. Res., 68: 981-987.

David, D.J. and Nicholson, R.V., 1995. Field measurements for determining rates of sulphide oxidation. Proc., Sudbury '95 Conference on Mining and Environment, Sudbury, Ontario, May 28-June 1.

Kwong, E.C.M., Scharer, J.M., Byerley, J.J. and Nicholson, R.V., 1995. Prediction and control of bacterial activity in mine drainage. Proc., Sudbury '95 Conference on Mining and the Environment, Sudbury, Ontario, May 28-June 1.

Ronald V. Nicholson, Ph.D.

SENIOR SCIENTIST

PUBLICATIONS, REPORTS and TEACHING ACTIVITIES- R.V. Nicholson

Publications

Nicholson, R.V., G. Williams, M. J. Rinker and B. Swarbrick, 2003. Implications of non-acid metal leaching on mine rock management at a nickel mine in permafrost terrain (Accepted - Sudbury 2003 Mining and the Environment)

Nicholson, R.V., M. J. Rinker, and G. Acott, 2003. Integration of field data and a geochemical transport model to assess mitigation strategies for an acid-generating water rock pile at a uranium mine (Accepted Sudbury 2003 Mining and the Environment)

Nicholson R.V., G. Williams, M. J. Rinker and B. Swarbrick, 2003. Implications of non-acidic metal leaching on mine rock management at a nickel mine in permafrost terrain. (Accepted 7th International Symposium on Mining in the Arctic, March 30 – April 1, 2003)

Hollings, P., M.J. Hendry, R.V. Nicholson and R.A. Kirkland, 2001. Quantification of Oxygen Consumption and Sulphate Release rates for Waste Rock Piles Using Kinetic Cells: Cluff Lake Uranium Mine, Northern Saskatchewan, Canada. Applied Geochem., 16: 1215-1230.

Janzen, M.P., Nicholson, R.V. and Scharer, J.M. 2000. Pyrrhotite reaction kinetics: Reaction rates for oxidation by oxygen, ferric iron, and for nonoxidative dissolution. Geochim. Cosmochim. Acta, 64: 1511-1522.

Nicholson, R.V., Rinker, M.J., Tibble, P.A., Williams, G. and Wiseman, M. 2000. An Integrated Approach to Assess Acid Generation and Metal Release from Sulphide Tailings Using Oxygen Consumption Measurements, Pore Water Chemistry and Geochemical Modelling, 5th International Conference on Acid Rock Drainage, May 21-24, Denver, Colorado, pp. 693-700.

Nicholson, R.V. and Rinker, M.J. 2000. Metal Leaching from Sulphide Mine Waste Under Neutral pH Conditions, 5th International Conference on Acid Rock Drainage, May 21-24, Denver, Colorado, pp. 951-958.

Anderson, M.E., Scharer, J.M. and Nicholson, R.V., 1999. The Oxygen Consumption Method (OCM): A New Technique for Quantifying Sulphide Oxidation Rates in Waste Rock, Sudbury '99, Mining and the Environment, September 12-15, Sudbury, Ontario, pp. 1133-1142.

Nicholson, R.V., Rinker, M.J., Williams, G. and Napier, W. 1999. Assessment of Water Quality Associated with Underwater Disposal of Tailings and Waste Rock from the Voisey's Bay Project, Labrador, Canada, Sudbury '99, Mining and the Environment, September 12-15, Sudbury, Ontario, 127-136.

PROFILE

Ronald V. Nicholson, Ph.D.

SENIOR SCIENTIST

Mine Closure

Responsible for mine waste and facility closure planning for several major projects with unique challenges. These include Voisey's Bay (nickel leaching), Strathcona (nickel leaching and ARD), Hardy, McClean Lake (arsenic and nickel leaching), Cigar Lake (arsenic leaching), Cluff Lake (ARD and nickel leaching).

Senior Review

Ron is often called on to provide senior or peer review of projects with challenging issues related to mine waste, groundwater and geochemistry. He has conducted reviews at several mines, including, Ok-Tedi, Samatosum, Faro, Antamina and Cluff Lake, .

Geochemical Modeling

Ron has special expertise in geochemical modeling and assessment of contamination of water with metals, arsenic and other inorganics. He has been the principal investigator on several projects involving specialized modeling evaluations including arsenic mobilization from mine waste, complex uranium-arsenic-nickel solutions migrating through lake sediments, and acidic copper solutions in groundwater.

PROFILE

Ronald V. Nicholson, Ph.D.

SENIOR SCIENTIST

PROJECT EXPERIENCE

Contaminant Hydrogeology

Principal Investigator and project leader on numerous contaminated sites involving hydrocarbons, creosote, chlorinated solvents, metals and radionuclides. These sites were affiliated with the steel manufacturing industry, electronics manufacturing, mining and storage facilities. Projects were conducted in Canada and the USA. Clients included General Electric, Stelco Steel, Cogema Resources Inc., Province of Ontario (MOE), Celanese and Dehavilland (Bombardier).

Site Assessment of Tailings Facilities

Principal investigator for numerous tailings facilities to assess surface and subsurface water quality, acid generation rates and rehabilitation strategies. His experience includes investigations at base metals mines, gold and uranium operations including Kidd (zinc-copper), East Mine (nickel-copper-cobalt), Strathcona (nickel-copper-cobalt), Williams (gold), McClean Lake (uranium). Tailings assessments focus on cost effective innovative approaches to control; costs and maximize information collection.

Waste Rock Characterization

Waste rock assessments were conducted for numerous projects, both at proposed and existing operations. The characterization studies focused on prediction of water quality associated with drainage from waste with emphasis on implementation of waste management strategies to prevent water quality impacts. Ron was the principal responsible for waste rock investigations for Voisey's Bay (nickel-copper-cobalt), Troilus (gold), Raglan (nickel-copper-cobalt), Cigar Lake, Midwest Lake, McLean Lake (high arsenic uranium), Williams (gold).

Environmental Assessments

Ron has been involved in the environmental assessment process through CEAA. He was part of the proponent team for the Voisey's Bay project responsible for mine waste management components. Ron provided expert testimony in support of the project during the public hearings. He also has several years experience on the proponent teams for several uranium projects in Saskatchewan for McClean Lake (waste rock and tailings disposal) and Cigar Lake (waste rock).

Permafrost Environments

Ron has been intimately involved in mine waste assessment and management at the Raglan mine, located in the permafrost region of Northern Quebec. He has been instrumental in directing the management of waste rock and tailings to revise mine plans to dramatically reduce closure costs associated with mine rock reclamation. He is currently responsible for reevaluating the baseline study with a focus on elevated nickel levels related to natural weathering in areas of proposed open pit mines.

APPENDIX 2 TO EC/DFO INTERVENTION

SENIOR SCIENTIST

Stantec

Ronald V. Nicholson, Ph.D.

Ron brings a unique blend of practical problem solving and academic experience to identify and assess ongoing needs and challenges related to water quality and waste management.

Ron has a background in geology, hydrogeology and geochemistry. He completed his Ph.D. in Hydrogeology and Geochemistry at the University of Waterloo in 1984. Since that time he has worked as a consultant and research scientist, and has been a principal investigator on a wide variety of projects involving water quality investigation as well as waste characterization, assessment and management. He has special expertise in geochemistry and extensive experience with water quality issues including contaminated sites involving metals, radionuclides, solvents and hydrocarbons.

Ron has been the technical leader on many projects for the mining industry addressing contaminant release from tailings and waste rock, as well as management and rehabilitation measures that can be used to control and manage acid mine drainage and metal leaching. These projects have included several major assessments involving permitting at base metal, gold and uranium mines. He has also been involved in numerous projects for government related to mining and the environment and was a member of the Prediction sub-committee in the Mine Environment Neutral Drainage (MEND) program from 1988 to 1997. Ron has also published extensively on water quality and mine waste issues in the peer-reviewed literature and at international conferences.

EDUCATION

Ph.D., Hydrogeology, University of Waterloo 1984

M.Sc., Hydrogeology, University of Waterloo 1980

Bachelor of Science, Geology, Concordia University 1977

PROFESSIONAL AFFILIATIONS

Fellow, Geological Association of Canada

Member, American Geophysical Union

Member (Technical), Association of Groundwater Scientists and Engineers (NGWA)

OTHER AFFILIATIONS

Part-time Associate Research Professor, University of Waterloo

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TOWN OF FARO

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Yukon Water Board
Suite 106
419 Range Road
Whitehorse, Yukon
Y1A 3V1

September 26, 2003

Dear Board Members:

Re: Anvil Range Mine Complex Water Licence Renewal – Application QZ03-059

Please consider this letter an intervention in regard to the above referenced application. The Town of Faro has retained the services of Ken Nordin of Laberge Environmental Services - who has more than twenty years of on-the-ground familiarity with the Faro mine site - to prepare a technical analysis of the application submitted by the Interim Receiver. His work will serve as the basis for a detailed presentation to the Water Board at the October hearing in Faro.

This intervention identifies and describes a number of general issues and concerns in regard to this licence application. It also outlines our positions in regard to the concerns raised. We begin with a consideration of some adminstrative matters related to the application and move on to preliminary technical issues identified by Laberge Environmental Services on our behalf.

We intend to submit a more comprehensive "late filing" prior to the scheduled hearing in Faro.

<u>On water licence combination</u>

The Interim Receiver (IR) currently holds water licences QZ95-003, for the Faro Mine site in the Rose Creek watershed, and water licence IN89-002 for the Vangorda Plateau and Vangorda Creek Watershed. The sites affected by the two licences are more than ten kilometres apart.

The Rose Creek drainage, regulated by the first licence, discharges into Anvil Creek and ultimately the Pelly River - well downstream of the Town of Faro. The Faro pits, Faro rock dumps, the mill, mill tailings and several dams are all part of the complicated water management regime covered by the Rose Creek licence. The entire site is well outside the boundary of the Town of Faro.

On the other hand, the Faro townsite is located within the Vangorda Creek watershed. Almost everything that happens at the mine facilities within the watershed or anywhere else on the drainage has the potential to directly affect the town and its inhabitants. In fact, a number of mine structures and buildings fall within municipal boundaries.

Most importantly, the drinking water for the Town of Faro is drawn from wells within the alluvial fan of Vangorda Creek (upstream from its discharge into the Pelly River), under water licence MN00-030. Under that licence the municipality has the responsibility to supply safe drinking water to the town and to collect, treat and dispose of wastewater.

The Town of Faro, whether under the term of renewal of the existing licence, or under the terms of a final abandonment plan, will always have to contend with the water quality delivered to it by the managers of the Vangorda site in order to meet the conditions of its own water licence. This is based on the assumption that the surface and subsurface flow of Vangorda Creek is hydraulically connected to the Town Well.

For these reasons, the primary focus of our comments is on the second of the current licences subject to renewal, IN89-02. The same reasons which lead us to focus on the Vangorda licence also lead the Town of Faro to argue that the Vangorda licence should remain distinct from the water licence for the Faro mine site.

An argument for retaining separate licences

The proponent has cited streamlining of the review and regulatory process for licence renewal as a rationale for a combined licence for the Rose Creek and Vangorda Creek watersheds. For the Town of Faro, this would not have a streamlining effect.

The current licencing regime provides a discrete and transparent set of requirements for the licencee in regard to operations in the Vangorda watershed - the watershed of vital interest to the town and our residents.

In the present application, since renewals of existing separate licences are being sought, technical information and proposals for each are clearly segregated. As a small municipality - with limited resources to bear on such matters, despite the enormous possible implications of problems within the management of the watershed -- we appreciate the separation. We can focus on the application that is most important to us.

We are concerned that a combined licence could well have the potential to wrap up monitoring or other provisions for one watershed with the provisions for the other. This could require us to commit far more resources than we could afford in order to analyze a highly complicated compound licence application, and in order to protect our interests and our water supply.

In the future, if problems develop with the Vangorda drainage waters from which we draw our municipal water supply, we could well face a challenge attempting to meet the requirements of our own licence due do the operations of an upstream manager. This might also become a matter for the Water Board or enforcement authorities to consider at that time. In that event, we believe it would be far more convenient for all concerned – in particular for those who will be here long after the Interim Receiver has vacated the mine site -- to deal with a licence for a single watershed.

The applicant also cited a desire to maximize coordination of management and operation of water treatment facilities as a basis for seeking a combined licence. The fact is that the current licences govern measures taken in two completely distinct drainages at a significant distance from each other. Consolidation of the licences will not put the areas concerned in closer proximity to each other. Neither should it yield the same management provisions for each watershed. Each watershed presents a distinct set of problems and will require its own monitoring and management provisions.

In our view, the highest possible standards should be maintained for a watershed that is the source of drinking water for a whole community. We will be the first to feel the impact of any failure in the water management system for the Vangorda Plateau.

The standards set for water management in the Vangorda drainage should not be diluted by the cost implications or other considerations that may be generated by a potentially more complicated management regime for the Faro Mine site. In fact, the Town of Faro has a general concern that the convenience of the Interim Receiver is increasingly dictating management actions in regard to water licences.

More rigorous monitoring and testing provisions may be required for the Vangorda watershed - which serves as a Municipal water supply - than for the Rose/Anvil Drainage. We would hope that stringent measures will be enforced. We hope that the Board and the licence applicant are aware that Faro residents expect to be consulted about and involved in decisions that affect both their drinking water and the land within the municipality.

Licence applicant or holder

The current applicant for licence renewal is the Interim Receiver (IR), Deloite and Touche, Inc., appointed by an Ontario court to manage the assets of the Anvil Range Mine complex. We understand that Indian and Northern Affairs Canada funds the Interim Receiver's care and maintenance of the site and that the Interim Receiver will not maintain responsibility for the site beyond 2008.

We also understand – although we have not been able to confirm this at this date - that land tenure status for parts of the mine complex may be in question because of non-payment of fees. In our view, if this were the case, it would give rise to some question about the authority under which the IR proposes to undertake activities on these lands.

The Town further understands that in 2008 Indian and Northern Affairs Canada and the Government of Yukon will assume formal responsibility for the site. They will begin to manage it under the terms of a Final Closure and Reclamation Plan (FCRP) that they are now developing through a joint government project team called the Type II Mines Project Office. (We understand that discussions of the FCRP will begin soon and trust that they will provide full opportunity for municipal involvement.)

The Town of Faro anticipates that as the FCRP evolves, clear goals will be developed for final closure of the site. We would expect that the proposed care and maintenance plan might well need to be modified during the term of the proposed licence in order to shape ongoing work to meet those goals.

We are concerned that the proposed care and maintenance plan does not provide for assessment of activities that are likely to change as work at the site moves towards site closure. And we are also concerned about enforcing accountability for decisions taken during the term of the proposed licence given that the applicant and potential holder of the licence will be relieved of site management responsibilities upon its expiry.

Furthermore, based on the Town's experience with the Interim Receiver to this date, we are concerned about the level of consideration that will be given by the IR to the issues raised by the municipality and local residents during the term of the licence renewal.

The Town of Faro is very concerned that planning and action on many matters is proceeding without adequate consultation by site managers and responsible authorities to determine community-supported goals for the site closure. Discussions on longterm goals for the closure are needed now – before future options are limited by the immediate concerns driving the decisions of the Interim Receiver.

In our view, since the proposed care and maintenance of the site is being financed by INAC now, and INAC and the Yukon Government are scheduled to assume joint management of the site in 2008 in any case, it might be appropriate to give some consideration as to whether or not the Interim Receiver is the appropriate applicant for renewal of the water licence(s).

We make no submission on the legal aspects of this situation, but we do believe that if the parties ultimately responsible for closure of the site were to hold the licence(s) for the proposed renewal period, more forward looking and responsive management of the site would be possible.

Care and maintenance plan

As noted by the "Draft Screening Report on the Anvil Range Mine Complex Water Licence Renewal (2004 to 2008)", at page 18, the majority of the proposed care and maintenance plan "is a continuation of the activities that have been carried out since 1998." Essentially the current application before the Board seeks a "status quo" licence. Our initial technical comments on aspects of the application follow.

Monitoring and mitigation measures for the Vangorda drainage
Vangorda Creek Water Quality

The Town of Faro believes that it is critical that the water quality of Vangorda Creek be protected. The Vangorda drainage is ultimately the source of drinking water for the Town of Faro. In our view, care and maintenance activities in the Vangorda Plateau should include an evaluation of the hydrogeology of the lower section of Vangorda Creek, and a study of how the surface water affects the quality and quantity of the aquifer serving the Town's well.

Although the project care and maintenance plan includes a contingency plan, called an "Adaptive Management Plan" (AMP), we do not see a specific AMP "Event" that would trigger a response to degraded water quality in Vangorda Creek. There are significant risks present at the Vangorda Plateau to both the chemical and physical stability of Vangorda Creek. These are not adequately dealt with in either the care and maintenance plan or the AMP. We believe that a "hair trigger" is appropriate when dealing with a watershed that supplies drinking water. This may mean more sampling points and/or more frequent monitoring and testing for specific indicators. The Town of Faro intends to address the issue of monitoring the Vangorda plateau and receiving waters in more detail at the public hearing.

The Town is very concerned about the potential cost implications of having to treat degraded water – or having to find an alternate water source if the Vangorda watershed is irreparably harmed.

Vangorda Creek Diversion and Related Issues:

Vangorda Creek is diverted around the Vangorda Pit through a series of components. The Vangorda Creek Diversion consists of a 1000 metre long open channel, partly lined with half-culvert. It has suffered major structural damage in the past few years. The Town of Faro is concerned that a loss of flow in Vangorda Creek as a result of failure of the diversion could impact the Town's water supply as well as the riparian flow in Vangorda Creek below the Vangorda Plateau.

As part of regular care and maintenance, the IR has examined the risks of failure of the diversion, and has taken some measures to address pit wall instability causing failures of the flume. Although it is most likely that a structural failure would occur during high flows, it is also possible that a sunny day failure of the diversion or one of its components could occur. In our view, the proposed care and maintenance activities and AMP do not adequately consider the effects that an accidental or deliberate fair weather loss of flow in the diversion would have on the downstream portion of Vangorda Creek.

Surface runoff is diverted from the Vangorda Pit by means of the Vangorda Pit Diversion Ditches. The AMP contains very weak provisions for tracking the impact of the ditches where they report to Vangorda Creek via Shrimp Creek. In our view, these could be strengthened.

Vangorda Waste Rock Dumps and Related Issues

In the main Vangorda Rock Dump there are about 16 million tonnes of waste rock. Zones within the dump area have high potential to mobilize metals through acid generation. About 225,000 tonnes of so-called "oxidized fines" are found in an area of the sulphide cell that is partly exposed to the surface. Drainage from this area reports to the Little Creek Dam and its pond, situated just down gradient from the toe of the Vangorda Rock Dump. Different efforts to collect surface seepage and groundwater have been attempted over the years. The current practice is to collect seepage and runoff behind the Little Creek dam and pump it either to the Water Treatment Plant or to the Vangorda Pit for subsequent treatment.

The IR has reported that the water in the Little Creek pond is "non compliant", and for this reason, annually draws the pond down to at least 1 m below the spillway. The Little Creek Dam is the last line of defence against degraded water quality in Vangorda Creek. It has been recognized as an important environmental protection structure **(5.3.2.1 p. 5-19 Exhibit 1.4)**.

We believe that the degree to which the Little Creek Pond is "non compliant" should be addressed. Similarly, contamination along the pathway from the waste rock to the little creek pond needs to be tracked and the transport mechanisms for contamination need to be understood.

The Town of Faro intends to address these issues in more detail at the hearing and to suggest studies and increased monitoring to address our concerns.

Proposed New Activities

Building Demolition and Disposal **(6.1 p. 6-1 Exhibit 1.4)** is a proposed new activity. The Town of Faro intends to address this issue and make suggestions as to how this plan might be carried out in a way that would increase benefits to residents of the area and minimize impacts on our infrastructure.

On Site Bioremediation **(6.2.3 p. 6-7 Exhibit 1.4)** is proposed for petroleum hydrocarbons. The Town of Faro intends to make suggestions as to the implementation of this plan.

Another Proposed New Activity is Maintenance of Acid Generating Materials **(6.3 p. 6-12 Exhibit 1.4)**. The applicant proposes that piles of highly reactive material in the Vangorda Waste Rock Dump (the oxidized fines), be covered with 1 m of compacted clay as an interim reclamation measure. Before embarking on this, we believe it would be important and beneficial to understand the source, transport mechanisms and fate of the high metals below the rock dump. The Town of Faro intends to suggest a study of metals migration from the dump, as well as increased surveillance and monitoring.

read to daily.

Adaptive Management Plan **(7 p. 7-1 Exhibit 1.4)**

The IR has proposed a series of monitoring requirements, triggers and actions or consultations that would result under certain conditions. The Town of Faro is concerned about ambiguous "triggers" proposed for water quality aspects of the plan. For example, the trigger often cited is a "sustained and statistically significant increase over the 1998 to 2002 baseline" **(Table 1.3 p. 7-3 Exhibit 1.4)**. It is not clear what would constitute such an increase, and it is not clear whether the 1998 – 2002 data is really baseline data at all. The AMP is currently silent with regard to degraded water quality in Vangorda Creek.

The Town of Faro intends to address both the proposed triggers and the proposed actions in regard to a several water quality issues, primarily as they pertain to the Vangorda watershed. The AMP should include at a minimum, more frequent monitoring of Vangorda Creek and a plan to respond to degraded water quality either in the creek itself or in the town well.

In addition to our concerns about degraded seepage and groundwater quality from the Grum Dump and the Vangorda Rock Dump, we are also concerned about pit water quality. The AMP addresses rising water levels in the Grum Pit **(7.6 P. 7-10 Exhibit 1.4)**, but the Grum pit water is described as "non compliant".

The Town of Faro is concerned that no information has been put forward concerning the trend in water quality of the Grum Pit, or of water in the Vangorda Pit for that matter. The Care and Maintenance Plan and the AMP only propose to "pump non compliant water to the Vangorda Pit for subsequent treatment".

closure

In our view, careful consideration should be given to investigating ways to treat and restore the pit waters *in situ* so that a cycle of "pump and treat" can be overcome in the long term. The Town of Faro intends to make suggestions regarding the AMP as well as the Proposed Studies **(10 p. 10-1 Exhibit 1.4)**. We hope to identify actions that could be taken within the term of the licence to get a start on longterm treatment and restoration of pit waters.

Predicted Environmental Effects and Mitigation

Water Resources are the key considerations of this project. The IR and government have conducted an analysis of current water quality (based on 1998 to 2002 data), and have then used mean values from this period as background water quality. Significantly, they go on to predict that the care and maintenance of the site "will not prevent elevated levels of contaminants in the receiving environment, at levels above current background and

check.

care and maintenance does not meet objectives of closure

CCME values" **(Draft Screening Report 8.2.1 p. 43)**. In our view, this puts the proposed care and maintenance plan in conflict with the final restoration plan since one of the stated goals of the FCRP is to *meet* CCME guidelines for receiving water **(Draft Screening Report 8.2.1 Mitigation p. 47)**. In our view, it might be beneficial to examine all available historic water quality data for both Vangorda and Rose Creek, and to then use these data to develop more realistic site-specific receiving water standards instead of stating a goal of "meeting CCME" standards.

Consultation and progress towards final remediation

Although the licence applications under review might be characterized as aimed at preserving the status quo while allowing time for responsible authorities to develop a final abandonment plan, as noted above, a number of new activities are in fact being taken along the way, including plans for building demolition, construction of landfills and so on.

Continued work by the receiver has implications for the Town of Faro. Unscreened materials show up in the municipal landfill, for example, or decisions are made that preclude options that might be preferred by the Town and its residents.

The Town of Faro is very concerned that planning and action on many matters is proceeding without adequate consultation by site managers and responsible authorities to determine community-supported goals for the site closure. Discussions on longterm goals for the closure are needed now – before future options are limited by the immediate concerns driving the decisions of the Interim Receiver.

We hope that the impending Water Board hearing will provide an opportunity to discuss some of the full range of matters that must be resolved as work begins to develop a final mine closure plan. The municipality and its residents will be living with the consequences of decisions made now for many years to come. We look forward to an opportunity to further delineate our issues, concerns and positions, both at the hearing and in a "late filing" we plan to make once we have had an opportunity to complete our detailed analysis.

Yours truly,

David M. Power
Chief Administrative Officer
Town of Faro

Cc: Deloitte & Touche Inc.
Dave Sherstone, INAC
Marg Crombie, YTG

Selkirk First Nation
P.O. Box 40, Pelly Crossing, Yukon Territory YOB 1PO
Phone: (403) 537-3331 Fax: (403) 537-3902

BY FAX & BY MAIL

September 26; 2003

Yukon Territory Water Board
106-419 Range Road,
Whitehorse, Yukon
Y1A 3V1

Attention: Secretary

Dear Madam:

Re: Renewal of Licence QZ03059
Anvil Mine

Please take this as notice that Selkirk First Nation ("Selkirk") wishes to intervene in the above-captioned Licence renewal proceedings before the Yukon Territory Water Board (the "Board").

Selkirk is the immediately downstream First Nation. Our traditional area, including its waters, and our people and interests, are at risk and may be affected by the environmental impacts of the Applicant's works and undertakings, and the strength and success of related mitigation measures and plans. These interests have been recognized by the Board in earlier proceedings concerning the Faro mine. We request the Board to afford Selkirk full standing in the current matter.

While Selkirk supports the renewal and consolidation of the Licence in general, and so as to maintain a regulatory mechanism in place with respect to the Applicant's works and undertakings, we are particularly concerned about the terms of the renewal and related commitments for the monitoring and mitigation of on-going environmental risks, the development, submission and implementation of a long-term abandonment plan and any related provisions for consultation with and the involvement of our First Nation in those matters.

I advise that Selkirk, as an intervenor, would attend at the hearing of the matter on October 27, expects to file both oral and written submissions, and may be represented by counsel at the hearing and in any prior related proceedings.

Our contact information is as appears above. Please direct all correspondence in this matter to my attention.

We will advise the Applicant of our notice and interests by way of delivery of a copy of this notice to its counsel.

Sincerely yours,

Deputy Chief Sharon Sims

cc. Murray Leitch,
Miller Thomson LLP
Counsel for the Applicant